

# **TOTAL MAXIMUM DAILY LOAD FOR TOXICS FOR THE CALCASIEU ESTUARY**

## **Comments and Responses**

Fourteen comment letters were received on the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary. Each letter was given an identification number in the sequence in which it was examined. The commenters and their identification numbers are presented in the following table<sup>1</sup>.

Number	Organization
001	Gulf Restoration Network
002	Louisiana Department of Environmental Quality
003	C-K Associates, Inc.
004	Louisiana Chemical Association
005	Equistar
006	Lyondell Chemical Company
007	Sasol North America, Inc.
008	W.R. Grace & Co.
009	Citgo Petroleum Corporation
012	RESTORE
013	Louisiana Mid-Continent Oil & Gas Association
014	Conoco Inc.
015	Firestone Polymers
016	PPG Industries, Inc.

For each letter, individual comments were identified in sequence, from 0001 to the number of comments identified. In responding to the comments, some comments that were originally identified were combined with other, adjacent comments, so that sequential comments may indicate gaps in the sequence. Sometimes, originally identified comments were divided into more than one comment. In these cases, an "a" and "b" were appended to the sequence number.

Originally, almost 700 individual comments were identified, but after consolidation and splitting of comments, only 600 individual comments remained.

Responses to comments were developed in commenter sequence. Several of the comment letters contained identical, very similar, or essentially the same comments as other comment letters. As these were identified, these comments were linked in a database to the response to the original comment. This process determined the structure of the response-to-comments document.

The responses to comments document presents the response only to unique comments. After each comment and response, if other commenters had made the same or similar comments, the comment number is listed. Thus, one can check to see whether the comment represented the views of several commenters. After matching similar comments to already-developed responses, just over 200 unique responses were developed. The Comment/Response document identifies the original comment for which each unique response is developed. The Comments document lists each comment by commenter and identified comment.

---

<sup>1</sup> Note that comment letters 010 and 011 are not included. The letters did not pertain to the Draft Total Maximum Daily Load for Toxics for the Calcasieu Letter, but this was not identified before the identification numbers were assigned.

## Comments/Responses

### **Comment**      **001/0001**      **Gulf Restoration Network**

According to a federal TMDL advisory committee formed in 1998, waters should only be removed from the state 303(d) list when (1) new data shows the listed water has attained water quality standards or (2) new information shows that the original listing was in error. The GRN believes that waters should only be removed from the 303(d) list when one of these two conditions is satisfied.

### **Response**

EPA has delisted subsegments only where there is a weight of evidence that the subsegment is no longer impaired. The evidence used includes evaluation of “all existing and readily available data” and information to demonstrate that:

1. Louisiana water quality standards are being met; or
2. On evaluation of the weight of evidence, it is reasonably certain that Louisiana water quality standards are being met.

Unless there was a weight of evidence that water quality standards are being met, pollutants on the court-ordered 303(d) list were not delisted. EPA regulations allow for delisting of waters for “good cause”. Good cause includes

### **Comment**      **001/0002**      **Gulf Restoration Network**

In addition, all information and data used to show that the water is currently meeting water quality standards must be provided to the public for review. Without this information, it is impossible for members of the public to make detailed, knowledgeable comments on the validity of the proposed delistings.

### **Response**

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

### **Comment**      **001/0003**      **Gulf Restoration Network**

The GRN notes that only 4/20 of the proposed delistings were accompanied by information and data that are used to support the delisting proposals. In particular, subsegments 030301 (ammonia), 030302 (non-priority organics), 030306 (non-priority organics), 030901 (non-priority organics), 030901 (other inorganics), 030302 (priority organics), 030303 (priority organics), 030304 (priority organics), 030305 (priority organics), 030401 (priority organics), 030402 (priority organics), 081001 (nutrients), 081402 (organic enrichment/low DO), 081609 (organic enrichment/low DO), 080901 (phosphorus), and 080903 (phosphorus) were not accompanied with information or data that supports a delisting decision for the public to review.

### **Response**

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

### **Comment**      **001/0004**      **Gulf Restoration Network**

Given that no supporting data or information was provided, or in any way referenced in the federal register notice for these water segment/pollutant combinations, the GRN can only assume that this data does not exist. Consequently, the justification for the delisting of the aforementioned segment/pollution combinations is unacceptable, and EPA Region 6 cannot approve the delistings. Until new information or data that supports these

delistings is made available to the public for review, with an adequate opportunity for the public to comment, these segments should be considered impaired and TMDLs should be developed to address these pollutant concerns.

### **Response**

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

### **Comment      001/0005      Gulf Restoration Network**

The only data sources that were included on EPA's website to support the delistings proposed by EPA were (1) ammonia data taken for three different waterbodies and (2) a draft report of Fish Tissue Dioxin Investigation for Dugdemona River. This information does not represent all the available information concerning levels of dioxin and priority organics in waters in the Calcasieu Basin. In particular, the following sources of data need to be considered before EPA approves these delistings:

- (1) Data and information from EPA's own website, which document the severity of contamination from priority organics in subsegments 030302, 030303, 030304, and 030305 ;
- (2) Studies undertaken by the Agency for Toxic Substances and Disease Registry, which analyze dioxin levels in seafood in the Calcasieu River Basin;
- (3) Studies undertaken by the Environmental Protection Agency, in coordination with other federal and state agencies, which analyze the level of contamination in sediments in the Calcasieu River and surrounding watershed ; and
- (4) The National Coastal Condition Report, which documents problems with contaminated sediment, benthos, and fish in the Louisiana's coastal rivers and estuaries.

### **Response**

The information that is used to determine which subsegments should be delisted for a pollutant and which should not is documented in the TMDL. Appendix H presents reasons why each subsegment/pollutant is being delisted. Additional information is presented in the body of the document for each waterbody. See Appendix B for water and sediment quality data, Appendix D for edible fish tissue information, and Appendix E for facility discharge information.

With the exception of "studies undertaken by the Agency for Toxic Substances and Disease Registry, which analyze dioxin levels in seafood in the Calcasieu River Basin," these data sources were evaluated in the TMDL. The absence of a fish advisory for dioxin in the Calcasieu indicates that the Louisiana Department of Health and Hospitals believes that there is no significant risk associated with current dioxin levels.

### **Comment      001/0006      Gulf Restoration Network**

Before EPA can approve the delisting of any stream segment for priority organics, non-priority organics, or other organics, sediment and fish tissue sampling data need to be collected and considered. Because many of these organics are hydrophobic, they do not easily dissolve in the water column. Instead, these pollutants tend to build up in the sediment and, under certain conditions, may become available to be uptaken by fish and other aquatic life, as well as the humans who consume this fish. Thus, contamination of sediment and fish by priority organics is a serious health threat that must be considered when evaluating the quality of a water environment. The GRN strongly advises EPA to only delist waters for hydrophobic pollutants (e.g. priority organics and heavy metals such as mercury) that have been tested and proven clean for water column quality, sediment quality, and fish tissue quality. Without a comprehensive approach to water ecosystem sampling, many waters that pose significant public health threats will be removed from the 303(d) list and not receive the cleanup they deserve.

### **Response**

EPA has documented the data that are used to make the delisting determinations in the TMDL. EPA believes it has taken a conservative approach to delisting and has not delisted waters where there is no weight of evidence that the

subsegment is not impaired.

**Comment      001/0007      Gulf Restoration Network**

The state of Louisiana has not yet adopted numeric criteria that identify acceptable levels of nutrients (i.e., nitrates, phosphorus, and ammonia) in waterbodies throughout the state. Currently, only narrative nutrient criteria are incorporated in Louisiana's Water Quality Standards. This narrative standard is difficult to translate to numeric criteria that fully protect the designated uses of the waters of the state. The GRN, therefore, requests EPA to deny delistings for waters listed as impaired by high nutrient levels (including water segments 030301 (ammonia), 080102 (ammonia), 080901 (ammonia), 080905 (ammonia), 081001 (nutrients), 080901 (phosphorus), and 080903 (phosphorus)), until numeric nutrient criteria are adopted by the state in 2004, and adequate nutrient water quality data are collected that indicate these criteria are being met.

**Response**

The TMDL for the Calcasieu concerns the toxic aspect of the nutrient ammonia. Ammonia can also have adverse environmental impacts by contributing to eutrophication and contributing to oxygen depletion in a waterbody. EPA evaluated the likely sources of ammonia and the likely toxicity of ammonia that would result from those sources and has determined that ammonia toxicity is not contributing to impairment in subsegment 030301.

**Comment      002/0001      Louisiana Department of Environmental Quality**

It is inappropriate to use non-regulatory "targets" (sediment guidelines or others) as end-points for TMDLs.

**Response**

It is clear from available data that the sediments in several of the subsegments in the Calcasieu Estuary are toxic to aquatic life. Louisiana's narrative toxicity standard (LAC 33:IX.1113.A.5) applies to sediments. Non-regulatory targets were used to interpret the State's narrative toxic criterion by identifying those pollutants that may be contributing to sediment toxicity to ensure that continuing sources of those pollutants are at levels that likely prevent continuing sediment toxicity.

Sediment targets were used only as screens for pollutants that may reasonably be expected to contribute to sediment toxicity. This is necessary to protect the sediments and ensure that Louisiana's narrative toxicity standard is being met. In each case where a pollutant (or group of pollutants) were identified, results of a Toxicity Identification Evaluation (TIE) were compared with the identified pollutant to see whether the pollutants identified were consistent with the TIE results. In each case, identified pollutants are consistent with the TIE results, indicating that there is a weight of evidence that the identified pollutants are at least partially responsible for the observed toxicity.

Once a pollutant was identified, however, Louisiana Numerical Criteria for Specific Toxic Substances (LAC 33:IX.1113.C.6) or EPA Recommended Water Quality Criteria (<http://www.epa.gov/ost/oc/revcom.pdf>, for pollutants with no Louisiana numerical criteria) were used to calculate TMDLs. If discharges meet the water quality-based TMDLs, then sediments and the water column should be protected.

**Similar Comments**

002/0025a    Louisiana Department of Environmental Quality  
004/0032    Louisiana Chemical Association  
007/0009    Sasol North America, Inc.  
009/0035    Citgo Petroleum Corporation

**Comment      002/0002      Louisiana Department of Environmental Quality**

Incorrect flows were applied in some areas (e.g. harmonic mean was used rather than tidal flows).

**Response**

Tidal flows as described in LDEQ's Standards Implementation document have been used to calculate wasteload allocations in the Final TMDL. Tidal flows were taken from permit fact sheets obtained from LDEQ.

**Similar Comments**

004/0015 Louisiana Chemical Association  
 009/0014 Citgo Petroleum Corporation  
 016/0019 PPG Industries, Inc.

**Comment      002/0003      Louisiana Department of Environmental Quality**

EPA's use of non-clean technique metals data is inappropriate. Metals data from the Superfund project should not have been used at all since clean sampling and analysis techniques were not used. When EPA did use these data, they were often not applied correctly. For example, Louisiana instream criteria are based on dissolved metals; yet EPA used both dissolved and total metals data to compare to the dissolved criteria. EPA's use of applying total metals to dissolved metals criteria in order to determine exceedances is flawed.

**Response**

EPA TMDL regulations (130.7(b)(5) require that "all existing and readily available water quality-related data and information" be used in making listing decisions. This does not limit this information to those data that are sampled and analyzed by clean techniques. Clean techniques are appropriate, in fact necessary, when metals are present at low concentrations (at levels below the detection limits of conventional techniques). When, however, metals are detected at levels well above the method detection limits, the data are valid, when appropriate quality assurances protocols are used, and can and should be used to determine compliance with applicable water quality criteria.

The EPA data used in the TMDL were validated through extensive quality assurance procedures. The data are the subject of the report entitled "Phase I Data Evaluation Summary Report?Text, Tables, and Appendix A-Data Evaluation Summary Tables, Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, Volume 1." This document was prepared by CDM and dated October 6, 2000. "Appendix C - Contract Laboratory Program Inorganic Data Validation Reports, Volume IV" served as the data validation for both the sediment and water samples collected during Phase I sampling. These were two volumes of a five volume data validation. This form of validation is conducted for all Superfund data. Volume IV included data reviews performed by the Regional Laboratory in Houston. Of the ten sample groups (which consisted entirely or predominantly of water matrix results) reviews contained in this volume, nine had data that were considered to be "acceptable for Regional use." On the remaining set, the blank concentrations affected cadmium and chromium data, and the lead results indicated high negative instrument readings, thus these data were qualified. Volume I, Section 3 concludes "Assessment of the data collected for this project by validation and evaluation criteria has determined that the majority of the data collected are usable for their intended purposes. The data that are not usable is limited and does not greatly impact the decision making process for the RI/FS." Volume I indicates that precision, accuracy and representativeness of the inorganics data (including metals) were acceptable.

Total metals data are not used to determine pollutants of concern in the Final TMDL.

**Similar Comments**

002/0036 Louisiana Department of Environmental Quality  
 002/0038 Louisiana Department of Environmental Quality  
 003/0007 C-K Associates, Inc.  
 004/0013 Louisiana Chemical Association  
 004/0039 Louisiana Chemical Association  
 005/0014 Equistar  
 006/0008 Lyondell Chemical Company  
 009/0010 Citgo Petroleum Corporation  
 009/0012 Citgo Petroleum Corporation  
 009/0042 Citgo Petroleum Corporation  
 014/0017 Conoco Inc.  
 015/0014 Firestone Polymers  
 016/0012 PPG Industries, Inc.  
 016/0013 PPG Industries, Inc.  
 016/0044 PPG Industries, Inc.

**Comment**      **002/0004**      **Louisiana Department of Environmental Quality**

LDEQ Ambient Network data should not have been used to justify TMDLs for the same reason as the Superfund data. The available LDEQ data were not collected and analyzed using clean techniques. LDEQ uses these data as a screening tool to target more intensive sampling and analysis using clean techniques, not for justifying and developing TMDLs.

**Response**

EPA TMDL regulations require that "all existing and readily available water quality-related data and information" shall be assembled and evaluated (40 CFR 130.7(b)(5), not strictly those data that are sampled and analyzed by clean techniques. Clean techniques are appropriate, in fact necessary, when metals are present at low concentrations (at levels below the detection limits of conventional techniques). When, however, metals analyzed by conventional techniques are detected at levels well above the method detection limits, the data, if appropriately quality assured, are valid and can and should be used to determine compliance with applicable water quality criteria. EPA believes that in this case there is no justifiable basis for excluding the Superfund data. (See also response to comment 002/0005.)

**Comment**      **002/0005**      **Louisiana Department of Environmental Quality**

It is inappropriate to assume industries discharge a pollutant when it has not been included in their permit. EPA knows that when effluent limits are determined for each facility based on a number of factors, including the type of facility, types of waste-streams and effluent data submitted during the application process.

**Response**

Most facilities discharge toxic pollutants at some level, and there are numerous examples of facilities similar to the facilities discharging to the Calcasieu Estuary that discharge the identified toxic pollutants at low levels. The fact that a facility has no limits at present is an indication that the facility either a) did not detect the pollutant in its wastestream and/or b) that the permit writer, using Louisiana Water Quality Criteria and data and guidance available at the time the permit was written, did not determine that the pollutant was likely to cause a water quality exceedance.

Where water quality criteria or sediment quality guidelines are exceeded, and facilities similar to those discharging to the receiving water have effluent limits and monitoring data that show the potential to discharge the pollutant, it is logical to limit the effluent for that pollutant. If, in fact, a facility does not discharge the pollutant at levels detectable using the most sensitive methods, then no additional cost, except the monitoring cost, is incurred, irrespective of at what level the effluent limit is set. If, however, detectable concentrations of the pollutant are present in a discharge, additional controls may be needed to ensure that instream criteria are met and sediments are protected.

**Comment**      **002/0006**      **Louisiana Department of Environmental Quality**

Monitoring schedules and locations for the different pollutants have been recommended for Louisiana throughout the document; Louisiana will continue its ambient and intensive monitoring programs according to established schedules and agreements.

**Response**

The monitoring locations and frequencies that are specified in the TMDL are those that are recommended minimum requirements to determine whether individual subsegments are meeting or not meeting water quality standards. There are options available for cooperative monitoring programs.

**Comment**      **002/0007**      **Louisiana Department of Environmental Quality**

DEQ's comments concerning specific TMDLs will indicate that EPA has made numerous errors in listing dischargers in the TMDL.

**Response**

EPA acknowledges that there were errors. The document has been revised based on the information provided in this

letter and review of facility permits, fact sheets, and permit applications.

**Comment**      **002/0008**      **Louisiana Department of Environmental Quality**

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. Neither LDEQ nor EPA has promulgated sediment criteria. Therefore, the use of non-regulatory sediment guidelines and screening values, as Region 6 has done in this report, is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

**Response**

The Calcasieu Estuary has been identified by the Superfund Program as representing a serious risk to human health and the environment. It is clear from available data from multiple sources that the sediments in several of the subsegments in the Calcasieu Estuary are toxic to aquatic life. Louisiana's narrative toxicity standard, "no substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant or animal life" (LAC 33:IX.1113.A.5), includes sediments. Non-regulatory targets were used to identify those pollutants that may be contributing to sediment toxicity to ensure that continuing sources of those pollutants are at levels that likely prevent continuing sediment toxicity.

Sediment guidelines were used only as screens for pollutants that likely contribute to sediment toxicity. In each case where a pollutant (or groups of pollutants) were identified, results of a Toxicity Identification Evaluation (TIE) were compared with the identified pollutant to see whether the pollutants identified were consistent with the TIE results. In each case, identified pollutants or groups of pollutants are consistent with the TIE results, indicating that there is a weight of evidence that the identified pollutants are at least partially responsible for the observed toxicity.

Once a pollutant was identified, however, Louisiana Surface Water Quality Criteria (LAC IX:33:1113) or EPA Recommended Water Quality Criteria (63 FR 68354, for pollutants with no Louisiana Water Quality Criteria) were used to calculate TMDLs. If discharges meet the water quality-based TMDLs, then sediments and the water column should be protected.

**Similar Comments**

007/0008      Sasol North America, Inc.

**Comment**      **002/0009**      **Louisiana Department of Environmental Quality**

Many of these TMDLs are based on models using historical water quality data gathered at a single or small number of locations rather than survey data gathered at sites spaced throughout the waterbody.

**Response**

The water quality data used for most subsegments, particularly those with the highest percentage of water quality criterion exceedances or sediment quality target exceedances, were taken at a large number of stations over a limited time period or at limited stations over a one- or three-year period. While water quality concentrations can vary widely, the number of water quality criterion exceedances indicate receiving water degradation that must be addressed. Sediment concentrations, on the other hand, vary less over time and are more indicative of average sediment conditions. A limited temporal, but detailed spatial sampling for sediment concentrations adequately identifies sediment quality concerns.

It is acknowledged that flow data were not taken concurrently with water quality (or sediment quality) data. Available flow information for the Calcasieu is extremely limited during any time period. This TMDL reflects the most accurate information available at the time of establishment.

**Comment**      **002/0010**      **Louisiana Department of Environmental Quality**

The hydraulic information used was generally an average value or estimated value, not taken at the same time as the water quality data. The calibrations are inadequate due to the lack of appropriate hydrologic data and the paucity of water quality data.

**Response**



It is acknowledged that flow data were not taken concurrently with water quality (or sediment quality) data. Available flow information for the Calcasieu is extremely limited during any time period.

**Comment      002/0011      Louisiana Department of Environmental Quality**

LDEQ has reviewed the TMDLs published by EPA on March 29, 2002. One particularly troubling issue for LDEQ is the fact that numerous dischargers that should have been included in these TMDLs were not. This indicates a complete disregard for the discharger inventory LDEQ provided to EPA. At the least, the TMDLs should acknowledge all facilities present in the covered watershed(s) and present the decisions for including or not including them in the TMDL.

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Comment      002/0012      Louisiana Department of Environmental Quality**

Bayou Verdine

Both of the listed dischargers, Conoco (LA 0003026) and Vista (LA0003336), currently discharge their process wastewater directly to the Calcasieu River and not to Bayou Verdine. Both facilities discharge some stormwater to Bayou Verdine. PPG discharges once-through non-contact cooling water, wash-down water, cooling tower blowdown, and stormwater to Bayou Verdine. Lyondell Chemical Worldwide discharges stormwater to Bayou Verdine.

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Similar Comments**

007/0033	Sasol North America, Inc.
007/0038	Sasol North America, Inc.
014/0002	Conoco Inc.

**Comment      002/0013      Louisiana Department of Environmental Quality**

Bayou d'Inde. The TMDL lists 5 industrial dischargers:

PPG Industries	LA0000761
Firestone Synthetic Rubber and Latex	LA0003824
Certainteed Products Corp	LA0041025
Equistar Chemical	LA0069850
Westlake Polymers	LA0071382

Discharging industries of significance, including the 5 above, are:

Air Liquide	LA0051730
Westlake Polymers	LA0071382.
PPG Industries	LA0000761
Equistar Chemical	LA0069850
Firestone Synthetic Rubber and Latex	LA0003824
Certainteed Products Corp.	LA0041025
Citgo Petro Corp.	LA0005941
Praxair Inc	LA0100099.
Air Liquid	LA0053708
Tessenderlo Kerley Inc.	LA0047058

W-H Holdings Inc.	LA0105155
Cetco	LA0101869
Denmar Enterprises	LA0108596

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Similar Comments**

009/0028	Citgo Petroleum Corporation
009/0095	Citgo Petroleum Corporation

**Comment      002/0014      Louisiana Department of Environmental Quality**

Contraband Bayou

The TMDL lists:

City of Lake Charles WWTP "C"	LA0036366
City of Lake Charles WWTP "B"	LA0036358

Significant dischargers are:

City of Lake Charles WWTP "B" and "C"	LA0036366
City of Lake Charles Center St East Water Treatment Plant	LAG380006
City of Lake Charles Center St West Water Treatment Plant	LAG380008
City of Lake Charles McNeese St Water Treatment Plant	LAG380009
City of Lake Charles Chennault Water Treatment Plant	LAG380009
McNeese Univ. Farm Labs	LA0104850

The discharge from Plant B has been routed to Plant C and the permit voided.

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Comment      002/0015      Louisiana Department of Environmental Quality**

Calcasieu River and Ship Channel – Saltwater Barrier to Moss Lake

The TMDL lists:

WR Grace	LA0001333
Basell USA	LA0003689
Lyondell Chemical World Wide	LA0005347
Citgo Petroleum	LA0005941
City of Lake Charles WWTP "A"	LA0036340
Calcasieu Refining	LA0052370
City of Sulphur WWTP	LA0067083
Westlake Petrochemicals	LA0082511
Westlake Styrene	LA0087157
Westlake Polymers	LA0103004

The TMDL list is complete except for the two facilities that were mistakenly put in Bayou Verdine, and one facility mistakenly put in Segment 030401:

Condea Vista Chemical	LA0003336
-----------------------	-----------

Conoco Lake Charles Refining  
Louisiana Pigment

LA0003026  
LA0080829

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Comment      002/0016      Louisiana Department of Environmental Quality**

Lake Charles

The TMDL listed no dischargers. Our files include one significant discharger for non-contact cooling water only: Holnam Inc., FKA Ideal Cement LA0003956

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Comment      002/0017      Louisiana Department of Environmental Quality**

Lower Calcasieu Estuary and Ship Channel

The TMDL lists:

Louisiana Pigment	LA0080829
Lake Charles Carbon	LA0003735

Significant dischargers are:

Cameron Parish Sewerage District 11	LA0039136
Reynolds Metals (Lake Charles Carbon)	LA0003735
Trunkline LNG	LA0055522

Louisiana Pigment is in Segment 030301, discharging to the Calcasieu River.

**Response**

The document has been revised based on the information provided in this letter and review of facility permits, fact sheets, and permit applications.

**Comment      002/0018      Louisiana Department of Environmental Quality**

The use of sediment data to assess for water quality use impairment and need for TMDLs has no precedent. In using this approach, Region 6 has gone beyond the regulatory guidance under the TMDL regulations. While the Louisiana general water quality standards state that no substances shall be present in toxic amounts in water and sediments underlying said waters, they contain promulgated criteria only for water. The criteria for water are used to protect sediments. Neither LDEQ or EPA have promulgated sediment criteria therefore the use of non-regulatory sediment guidelines or screening values as Region 6 has done in this report is not appropriate in assessing for water quality impairment or determining the need for TMDLs.

**Response**

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 15 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that

contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

#### **Similar Comments**

014/0009 Conoco Inc.

#### **Comment 002/0019 Louisiana Department of Environmental Quality**

The present status of the particular guidelines and screening values used in the report further support our contention that they are inappropriate for making assessments of Louisiana water quality standards or determining the need for TMDLs. As noted in the report, the EPA “Equilibrium Partitioning Sediment Guidelines (ESGs)” are “draft”. They are draft guidelines only and have been in various stages of development for many years resulting in changing values and approaches. Although based on scientific studies, if this concept was appropriate for use in assessing Louisiana water quality standards and determining the need for TMDLs, EPA would have made ESGs final by now. But as noted in the report, they are still draft and under development and not appropriate or justified as a regulation for determining water use impairment or need for TMDLs.

#### **Response**

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

#### **Comment 002/0020 Louisiana Department of Environmental Quality**

The use of the National Oceanic and Atmospheric Administration’s (NOAA) Effects Range Medium (ERM) sediment screening values is equally problematic. The ERM concept was developed from a wide range of sediment toxicity data from a variety of habitats across the nation but has not reached the proper level of scientific or regulatory documentation or acceptance to justify incorporation as a regulation for use in assessing water quality standards or justifying a TMDL. Indeed NOAA stresses in their publications developing ERMs that both Effects Range Low (ERL) and ERM values “are not to be construed as NOAA standards or criteria”. And it might equally be stated that they not be construed as LDEQ or EPA standards or criteria. In fact EPA has recognized this fact by denoting in the recently released Coastal Condition Report that, “these guidelines are still considered experimental and several publications have questioned their reliability in assessing sediment toxicity”. It is obvious therefore that the NOAA ERL/ERM screening values are just that, screening values, and are to be used only as a screening tool for evaluating and comparing sediment concentrations between habitats in different regions of the nation and not as a definitive assessment of aquatic toxicity, water use attainment or the need for developing a TMDL.

#### **Response**

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

**Comment**      **002/0021**      **Louisiana Department of Environmental Quality**

There are further concerns with using sediment concentrations for determining water use impairment and the need for TMDLs. Most contaminants found in sediments today relate to historical conditions and discharges and are not representative of current discharge conditions. To develop expensive TMDLs for chemicals that are no longer discharged or no longer discharged into specific waterbodies is inappropriate, unjustified and a waste of valuable resources. We believe that is the case with most of the sediment chemicals EPA alleges are causing water use impairment and require TMDLs in the Lower Calcasieu Basin and Ship Channel.

**Response**

While it is possible that much of the sediment contamination may have been from historical discharges, there are no data that allow the conclusion that existing discharges are not continuing to contribute to sediment contamination. This could be demonstrated, however, with monitoring data using as sensitive analytical methods as are available. If all discharges are at levels that comply with wasteload allocations developed under the TMDL, there will be evidence that historical, not current discharges have resulted in sediment contamination.

**Comment**      **002/0022**      **Louisiana Department of Environmental Quality**

The state has listed contaminated sediments in its 305(b)/303(d) process for only Bayous Verdine and d'Inde. The listings were done specifically for the historical problems with the chemicals hexachlorobenzene (HCB), hexachlorobutadiene (HCBd) and polychlorinated biphenyls (PCBs), which were reflected in an existing fish advisory, and not for the chemical substances in sediment as listed in the TMDL report.

**Response**

Sediments in these subsegments have been shown to exhibit toxic effects in toxicity testing results. The original listing of contaminated sediments for Bayou Verdine and Bayou D'Inde does not change the fact that sediment concentrations of other toxic pollutants are elevated in these subsegments. While it is acknowledged that available data indicate that hexachlorobutadiene, hexachlorobenzene, and PCBs do not appear to be present in toxic amounts in the sediments, the sediments, nevertheless, exhibit toxicity. It is reasonable to identify those pollutants that are most likely responsible for the toxicity and ensure that current discharges are not contributing to continued sediment toxicity.

**Comment**      **002/0023**      **Louisiana Department of Environmental Quality**

Controls to reduce or eliminate these discharges have since been put in place. The LDEQ has not determined that the concentrations of DDT, methoxychlor, PAHs or any metallic ions are high enough in sediments to document water use impairment or to justify a TMDL.

**Response**

Nevertheless, the sediments are toxic, and there is a large amount of sediment chemical data that indicates what pollutants are likely contributing individually or in combination to toxicity. Actions should be taken to control these substances. If it is shown through effluent monitoring data that current discharges do not contribute these pollutants and other sources do not become apparent through additional monitoring, then sediment remediation and long-term attenuation may be indicated to remove sediment toxicity.

**Comment**      **002/0024**      **Louisiana Department of Environmental Quality**

As stated previously, the use of the sediment guidelines and screening values proposed in the report is completely inappropriate and not scientifically defensible for determining water use impairment of Louisiana waterbodies or to justify the need for TMDLs in Louisiana waterbodies. We further protest the use of draft and experimental sediment guidelines and screening values to determine water quality impairment and then use the water quality standard for TMDL development when the water quality standard is attained in the waterbody. This is certainly without precedent and totally unjustified.

**Response**

ERMs and ESGs are reference levels that have been developed over a long period of time over a large variety of aquatic systems. When the concentration of a pollutant in sediment exceeds an ERM or ESG, this strongly indicates that the pollutant is contributing to sediment toxicity.

Both ERM and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

ERMs and ESGs are not used in setting wasteload or load allocations, only in determining the pollutants that contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria.

**Comment**      **002/0025**      **Louisiana Department of Environmental Quality**

Also, any listing of contaminated sediments and toxicity for the Calcasieu Ship Channel, subsegment 030301, based on LDEQ alleged data is in error. A complete check of LDEQ assessment records for 030301 clearly shows that EPA listed this subsegment for contaminated sediments and toxicity on the 303(d) list in error and it should be delisted. Documentation is submitted with these comments.

**Response**

**Check.** The court-ordered 303(d) list included contaminated sediments for subsegment 030301, and thus they must be considered.

**Comment**      **002/0025b**      **Louisiana Department of Environmental Quality**

And it is equally unjustified to use the water quality criterion for developing a TMDL for a chemical or metal such as Region 6 has done with mercury when the mercury water quality criterion is met in the waterbody.

**Response**

Where this was done it was because additional data or information indicted a reason for concern die to sediment concerns. When a subsegment is impaired, water quality criteria are the only legal basis for calculating a TMDL.

**Comment**      **002/0026**      **Louisiana Department of Environmental Quality**

Subsegment 030301 was listed on the Court Ordered § 303(d) list for Cu and Hg in the water column and unspecified metals in sediments. It was not listed for Pb in the water column. Therefore, Pb should be removed from consideration in the Calcasieu Toxics TMDL.

**Response**

Lead has been removed as a pollutant of concern for subsegment 030301.

**Comment**      **002/0027**      **Louisiana Department of Environmental Quality**

Ambient water quality data for metals collected in 1997 and 1998 by LDEQ was found to be fully supporting of freshwater criteria for Cu, Hg, and Pb, and not supporting marine criteria for Cu. However, clean-technique metals data previously submitted by LDEQ was found to be fully supporting both freshwater criteria and marine water criteria for Cu. Therefore, EPA Region 6 should remove Cu and Hg from the § 303(d) list, and remove Cu, Hg, and Pb from consideration in the Calcasieu Toxics TMDL.

**Response**

The court-ordered 303(d) list includes copper, and quality assured and verified EPA data indicate that 20 of 30 copper measurements exceed the marine dissolved copper criterion in subsegment 030301. This does indicate copper should be delisted.

The court-ordered 303(d) list includes mercury, and one EPA measurement of mercury exceeds the criterion by two orders of magnitude, and one LDEQ measurement exceeds the criterion by a factor of five. These data indicate that there are occasional large exceedances of the criterion that would likely be confirmed with additional data. The

magnitude of the exceedances indicate a TMDL is warranted. As mentioned in response to comment C-002/#26, lead has been removed as a pollutant of concern for subsegment 030301.

**Comment**      **002/0028**      **Louisiana Department of Environmental Quality**

Subsegment 030303 was not listed on the Court Ordered § 303(d) list for any metals in the water column nor for sediment contamination with metals. Therefore, Cu should be removed from consideration in the Calcasieu Toxics TMDL.

**Response**

Copper has been removed as a pollutant of concern for Prien Lake.

**Comment**      **002/0029**      **Louisiana Department of Environmental Quality**

Ambient water quality data for metals collected by LDEQ was found to be fully supporting of both freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

**Response**

The appropriate water quality criterion for all subsegments of the Calcasieu Estuary is marine criterion. Freshwater criterion are not appropriate for these waters. Copper has been removed as a pollutant of concern for Prien Lake.

**Comment**      **002/0030**      **Louisiana Department of Environmental Quality**

Subsegment 030304 was listed on the Court Ordered § 303(d) list for Cu, but not for Hg. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Hg should be removed from consideration in the Calcasieu Toxics TMDL.

**Response**

For the purposes of this TMDL, mercury is no longer a pollutant of concern for Moss Lake.

**Comment**      **002/0031**      **Louisiana Department of Environmental Quality**

Subsegment 030305 was not listed on the Court Ordered § 303(d) list for any metal. In addition, the subsegment was not listed for unspecified metals in sediments. Therefore, Cu should be removed from considered in the Calcasieu Toxics TMDL.

**Response**

Copper is on the court-ordered 303(d) list for Moss Lake, and copper concentrations exceed the marine dissolved criterion in at least three samples. That other data indicate that Moss Lake does not exceed criteria is not a sufficient reason to delist copper in subsegment 030304.

As stated in response to comment 002/0030, mercury is no longer considered a pollutant of concern for the purposes of this TMDL.

**Comment**      **002/0032**      **Louisiana Department of Environmental Quality**

Ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Cu. Therefore, EPA Region 6 should remove Cu from consideration in the Calcasieu Toxics TMDL.

Ambient water quality data for metals collected by LDEQ was found to be fully supporting of freshwater and marine criteria for both Cu and Hg. Therefore, EPA Region 6 should remove Cu and Hg from consideration in the Calcasieu Toxics TMDL.

**Response**

Copper has been removed as a pollutant of concern for Contraband Bayou. Originally copper was selected based both on dissolved and total data. When comparing only dissolved data against the criterion, the copper criterion is attained.

**Comment      002/0034      Louisiana Department of Environmental Quality**

Subsegment 030306 was listed on the Court Ordered § 303(d) list for unspecified metals and unspecified metals in sediments. However, ambient water quality data for metals collected by LDEQ in 1999 was found to be fully supporting of freshwater and marine criteria for Hg. Therefore, EPA Region 6 should remove Hg from consideration in the Calcasieu Toxics TMDL. Nickel was found to be fully supporting of freshwater criteria but not supporting marine criteria.

**Response**

Quality assured data for mercury in Bayou Verdine indicated that concentrations exceeded the dissolved mercury criterion in four of five samples and that the mean of detected values was almost 18 times the criterion. This level is sufficient to warrant a TMDL for mercury for subsegment 030306.

**Comment      002/0035      Louisiana Department of Environmental Quality**

Subsegment 030901 was listed on the Court Ordered § 303(d) list for Cu in the water column and for unspecified metals in sediments. It was not listed for Hg or Ni in the water column. Therefore, Hg and Ni should be removed from consideration in the Calcasieu Toxics TMDL.

**Response**

Almost half (45%) of the sediment samples taken in Bayou D'Inde are higher than NOAA's ERM, indicating that mercury contamination is certainly a major contributor to the sediment toxicity in subsegment 030901. TIE results are consistent with mercury contamination of the sediments. Quality assured data for water column mercury in Bayou D'Inde also indicate that concentrations exceed the marine dissolved mercury criterion in 2 of 12 samples, and the mean of the two detected samples exceed the criterion by a factor just over a factor of 2. LDEQ water quality network data also indicate a single exceedance for mercury at approximately 18 times the criterion level. EPA is also concerned that the total mercury in water appears to be much higher than the dissolved mercury, and the particulate portion of the total mercury is continuing to contribute to mercury contamination of the sediments. The weight of evidence indicates that a TMDL for mercury is warranted for Bayou D'Inde.

Quality assured data for copper in Bayou D'Inde indicate that concentrations exceed the marine dissolved copper criterion in 26 of 36 samples (72%), with a mean of detected values (28 samples) at 2.75 times the copper criterion. LDEQ water quality network data indicate a much lower percentage of exceedances (25%) and a mean of detected values that is below the copper criterion. The weight of evidence indicates that a TMDL for copper is warranted for Bayou D'Inde.

For the purposes of this TMDL, nickel is not included as a pollutant of concern for Bayou D'Inde.

**Similar Comments**

016/0005	PPG Industries, Inc.
016/0050	PPG Industries, Inc.
016/0055	PPG Industries, Inc.

**Comment      002/0037      Louisiana Department of Environmental Quality**

LDEQ's 2000 § 305(b) report found no metals criteria exceedances and, therefore, no metals were listed for any of the six water bodies in question in EPA Region 6's Calcasieu Toxics TMDL. A second review of metals data for the Calcasieu Estuary was conducted at this time for comments regarding the Calcasieu Toxics TMDL. Ambient water quality data collected by LDEQ, along with clean-technique metals data previously submitted by LDEQ came to the same conclusion as that reached for Louisiana's 2000 § 305(b) report. This review has shown that five of six water bodies considered by the Calcasieu Toxics TMDL (Upper Calcasieu (030301), Prien Lake (030303), Moss Lake



(030304), Contraband Bayou (030305) and Bayou d'Inde (030901)) are fully supporting both fresh and marine criteria for the metals shown in Tables 1 and 2. The remaining water body, Bayou Verdine is not supporting marine criteria for Ni.

### **Response**

LDEQ's 2000 305(b) report did not include evaluation of the newly available Superfund data. See response to comment 002/0003.

### **Comment      003/0001      C-K Associates, Inc.**

The Louisiana Department of Environmental Quality's (LDEQ's) 303(d) list is currently being updated by the LDEQ to accurately identify waterbodies and pollutants of concern which require inclusion on this list. Historical data used for this task in the past has been determined to be "not so" accurate and representative (i.e., metals data which did not employ field and laboratory "clean technique" procedures or analytical laboratory methods which were not used to achieve a certain minimum quantification level) of actual ambient conditions whereby waterbodies and/or pollutants (i.e., trace metals, organics) were placed on this list. This task has not been adequately completed and it is our opinion that calculating TMDLs before revision of the 303(d) list, for which some waterbodies and pollutants of concern may not all together be needed, is inappropriate.

### **Response**

See also response to comment 002/0003.

It is acknowledged that ongoing efforts are examining the quality of metals data taken with conventional techniques. Quality assured and validated data that achieve appropriate detection levels are appropriate in determining compliance with water quality criteria, particularly when observed data are detected at several times criterion levels. EPA believes these data are appropriate for decision-making purposes. Disregarding all metals data not collected by clean techniques would introduce a bias by eliminating a considerable body of information

While LDEQ claims that all of its data taken with conventional techniques are invalid, there has been no direct comparison of results analyzed using conventional versus clean techniques by LDEQ staff. It is accepted that clean techniques are necessary to achieve below criterion detection levels for some metals.

The selection of pollutants of concern for the TMDLs in this document is based in large part on a dataset that is of known and technically-defensible quality. Therefore, it is believed that the selection of the great majority of pollutants of concern is soundly based. From an environmental protection viewpoint, it is logical to select a pollutant of concern in all cases where monitoring data indicate that criteria are not being met instream.

The recently signed Louisiana Consent Decree requires that TMDLs for the Ouachita and Calcasieu Basins be completed by May 31, 2002. Waiting for additional information is not an option.

### **Comment      003/0002      C-K Associates, Inc.**

The State's 303(d) list needs to be updated before TMDLs are calculated. TMDLs were calculated for hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, and hexachlorobenzene solely on the fact that they are on the 303(d) list even though available data indicates that the constituent is not present in the water body or that an inadequate analytical method was used which did not achieve a certain minimum quantification level.

### **Response**

It is acknowledged that water column concentrations of hexachlorobutadiene, hexachlorobenzene, tetrachloroethane, bromoform, and PCBs are not demonstrably exceeding water quality criteria. Similarly, however, available data do not indicate that water column concentrations of the pollutants are NOT exceeding water quality criteria. The pollutants are selected as pollutants of concern when they appear on the court-ordered 303(d) list and there are insufficient data to justify their delisting. It will be almost impossible to determine that some pollutants such as PCBs comply with water quality criteria because conventional analytical techniques do not allow quantitation at criterion concentrations. In such cases other indicators of possible impairment such as fish tissue levels are appropriate. For this reason, a conservative approach of developing TMDLs for these pollutants was adopted.

**Similar Comments**

005/0003 Equistar  
016/0011 PPG Industries, Inc.  
016/0042 PPG Industries, Inc.

**Comment 003/0003 C-K Associates, Inc.**

Recent studies have shown that statewide criteria for metals are inappropriately stringent for rivers and streams in southern Louisiana. These streams naturally exhibit low, but significant background, ambient concentrations of metals as a result of natural geochemical conditions in the watershed.

**Response**

Under existing regulations, the State of Louisiana, with approval of EPA, may modify water quality standards based on the results of a site-specific criteria study in order to address natural geochemical conditions.

**Comment 003/0004 C-K Associates, Inc.**

The derivation of dissolved metals criteria set forth in the Louisiana Water Quality Standards (WQS) result in inappropriately and unrealistically low criteria for the protection of aquatic life because they do not account for the site-specific physical and chemical characteristics of the effluent and receiving water which determines the fate of the dissolved metal.

**Response**

Under existing regulations, dischargers may conduct a study to determine appropriate site-specific criteria for specific waterbodies based on evaluation of the considerations mentioned in this comment. With suitable technically-defensible analyses, the State of Louisiana and EPA could approve the use of the site-specific criteria for specific waterbodies. This procedure is outlined in the LDEQ's water quality standards implementation document.

**Similar Comments**

004/0044 Louisiana Chemical Association  
004/0105 Louisiana Chemical Association  
005/0019 Equistar  
006/0013 Lyondell Chemical Company  
007/0032 Sasol North America, Inc.  
009/0047 Citgo Petroleum Corporation  
009/0093 Citgo Petroleum Corporation  
014/0022 Conoco Inc.  
015/0019 Firestone Polymers

**Comment 003/0005 C-K Associates, Inc.**

In order for a metal to exhibit a toxic effect on aquatic organisms, the metal must be present in a bioavailable state. Certain water chemistry factors can change the partitioning of metal between the bioavailable and the non-bioavailable states, thereby affecting the toxicity of the metal. Relative to synthetic laboratory water, ambient receiving stream waters and wastewater effluents have significantly more complex water chemistries and therefore, have a greater capacity to assimilate dissolved metals, thus the potential to reducing the bioavailable concentration of a metal. The effect of this is a reduction in the toxicity of the metal in ambient receiving stream waters and wastewater effluents relative to synthetic laboratory water.

The EPA has recognized this phenomenon and published a guidance manual entitled Interim Guidance on Determinations and Use of Water-Effect Ratios for Metals, EPA 823-94-001, February 1994 in order for site-specific criteria to be developed and implemented that protect water quality. The effect of this is to raise statewide criteria to realistic levels based on a sound, scientific approach. Since the TMDLs calculated in this "draft" report were based on existing criteria, we believe it is prudent to evaluate existing criteria and modify criteria determined to be inappropriate and then calculate TMDLs rather than calculate TMDLs based on inappropriate criteria values.

**Response**

Dischargers may conduct appropriate studies as described in response to comment C-003/#5 at any time for approval by the State of Louisiana and EPA.

**Comment**      **003/0006**      **C-K Associates, Inc.**

The methodology to determine pollutants of concern included several sources. Some of these sources are not appropriate and many valuable sources are not included which indicates a lack of research by the contractor. Specifically, C-K Associates, Inc. conducted a Trace Metals "Clean Technique" Sampling and Laboratory Analysis Study on Bayou d' Inde, Bayou Verdine and the Calcasieu River in 2000. This report including the data were submitted to the LDEQ in March 2001 and subsequently reformatted by the LDEQ and submitted to the EPA, Region 6 in August 2001. This study consisted of the collection and evaluation of "conventional" and "clean technique" data which were collected "side-by-side" in accordance with the EPA guidance manual Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, EPA 821-R95-034, April 1995. Evaluation of the data indicated "clean technique" results were substantially lower than the "conventional" results. The ambient concentrations of dissolved copper obtained using "clean technique" monitoring clearly demonstrated that concentrations on Bayou d'Inde and the Calcasieu River did not exceed, or closely approach the marine numerical criteria established by the Louisiana WQS for copper.

**Response**

The study is useful in that it provided additional clean techniques data. However, EPA is not comfortable discounting other recent data based on a limited set of results.

**Comment**      **003/0008**      **C-K Associates, Inc.**

The TMDL calculation method employed a mass-balance approach. The narrative section and appendices do not provide adequate documentation of where input variables came from or how calculations were performed.

**Response**

A different approach is used in developing wasteload allocations in the Final TMDL than in the Draft TMDL. The revised approach is described in the Methodology section of the final TMDL.

**Comment**      **003/0009**      **C-K Associates, Inc.**

Louisiana does not have an aquatic life criterion for total copper as indicated in Table A-1. The aquatic life criterion for marine waters are expressed as a dissolved metal concentration (see LAC 33:1X.1113, Table 1).

**Response**

No "total" criteria are used in developing pollutants of concern or wasteload allocations in the Final TMDL.

**Comment**      **004/00.5**      **Louisiana Chemical Association**

Many of the following comments reflect serious concerns with the extreme lack of scientific rigor in EPA's TMDL process. Like concerns have been identified and discussed in previous high-level scientific advisory groups, most notably in Assessing the TMDL Approach to Water Quality Management (National Research Council, National Academy Press, 2001) (the "NRC Report"). LCA strongly suggests that EPA incorporate the recommendations of this and other evaluations to assure that TMDL decisions are made on a sound technical basis.

**Response**

EPA also supports the recommendations of the NRC. The Region developed the most supportable approach it could, taking into account time, resources, and data availability. Recommendations of the report are included in the Final TMDL as much as data, time, and resources allow.

**Comment**      **004/0001**      **Louisiana Chemical Association**

LCA submits that it is entirely inappropriate for EPA to establish TMDLs for pollutants which were not identified in the 303(d) list as causing or expected to cause violations of the applicable water quality standards. In particular,

LCA submits that EPA inappropriately established TMDLs for pollutants which were not on the 303(d) list but for which EPA asserts there have been water quality criterion exceedances, ERM exceedances, ESG exceedances, fish advisories, etc. For example, as indicated below, EPA has established TMDLs for certain water quality limited segments for pollutants not on the 303(d) list.

### **Response**

EPA is being consistent with the court-ordered 303(d) list as indicated below:

The basis for selecting pollutants of concern for the Final TMDLs is four-fold:

1. If a pollutant is on the court-ordered 303(d) list and there are insufficient data to delist the pollutant, the pollutant is retained as a pollutant of concern and a TMDL was developed.
2. Within pollutant categories on the court-ordered 303(d) list, if available water quality data indicate that pollutant criteria are not being met instream, then the pollutant is selected as a pollutant of concern.
3. If a pollutant not otherwise identified is subject to a fish advisory, then the pollutant is selected as a pollutant of concern.
4. Within pollutant categories on the court-ordered 303(d) list, if sediment quality data indicate that a pollutant is reasonably expected to contribute to sediment toxicity by comparison to available sediment quality targets, then the pollutant is selected as a pollutant of concern.

Each of these procedures provides evidence of impairment.

#### **Similar Comments**

004/0004	Louisiana Chemical Association
004/0055	Louisiana Chemical Association
004/0056	Louisiana Chemical Association
005/0026	Equistar
006/0020	Lyondell Chemical Company
009/0003	Citgo Petroleum Corporation
009/0056	Citgo Petroleum Corporation
014/0028	Conoco Inc.
015/0026	Firestone Polymers
015/0027	Firestone Polymers
016/0008	PPG Industries, Inc.

#### **Comment**      **004/0002**      **Louisiana Chemical Association**

The State of Louisiana has primacy in determining whether to add waters to the state's 303(d) list, and the state should be given the opportunity to review any data relied upon by EPA to determine (i) whether the 303(d) list should be amended to include the above pollutants or (ii) whether the data show that no impairment due to these pollutants exists. By reproposing TMDLs for pollutants not on the state's 303(d) list, EPA has impermissibly usurped state authority. See, Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d), and 40 C.F.R. 130.7.

### **Response**

For the purposes of this TMDL, no pollutants not specifically identified or within categories identified on the court-ordered 303(d) list are selected as pollutants of concern.

#### **Similar Comments**

004/0006	Louisiana Chemical Association
009/0001	Citgo Petroleum Corporation
009/0005	Citgo Petroleum Corporation
013/0013	Louisiana Mid-Continent Oil & Gas Association
016/0006	PPG Industries, Inc.

#### **Comment**      **004/0003**      **Louisiana Chemical Association**

LCA further submits that to the extent EPA desires to establish TMDLs for pollutants not included on the current

303(d) list, EPA should first establish a revised 303(d) list pursuant to the authorities referenced in the previous paragraph. EPA should not unilaterally establish TMDLs for water quality limited segments absent first revising the 303(d) list to add the pollutants of concern.

### **Response**

The 303(d) list was reviewed, and appropriate procedures were used to determine pollutants of concern based on the court-ordered 303(d) list and available data. The selection of pollutants of concern is documented in the Final TMDL.

#### **Similar Comments**

009/0002 Citgo Petroleum Corporation

#### **Comment 004/0005 Louisiana Chemical Association**

Where EPA's investigation of a pollutant shows that the state water quality standard for that pollutant is not being exceeded, then EPA must delist that waterbody for that pollutant on the 303(d) list. Indeed, EPA clearly has proposed to delist 20 waterbody/pollutant combinations in the Calcasieu Estuary and Ouachita River Basin for exactly that reason. See, 67ed. Reg. 15176, March 29, 2002.

### **Response**

EPA has delisted several pollutants for Calcasieu Estuary subsegments when there is a weight of evidence that no impairment exists. EPA established specific pollutants for categorical pollutant listings when a weight of evidence indicates impairment exists. But EPA did not delist pollutants in subsegments where delisting could not be supported by the weight of evidence.

#### **Similar Comments**

009/0004 Citgo Petroleum Corporation

016/0009 PPG Industries, Inc.

#### **Comment 004/0007 Louisiana Chemical Association**

EPA has proposed TMDLs for several of the pollutants based on the fact that the detection limit for such pollutants is lower than the relevant water quality standard. This is an inappropriate interpretation of the Clean Water Act. TMDLs are warranted only when there is evidence that a discharge has a reasonable potential to contribute to exceedance of a standard. It is not appropriate for EPA to adopt a TMDL simply because it presumes that substances do exist in the water and presumes further that these will be at levels above the standards. EPA cannot presume impairment without scientific basis. EPA should withdraw TMDLs where there is no detection of such pollutants using reliable data (such as clean and ultra-clean data where warranted). EPA should rely instead on 40 CFR 122.44(d)(1)(i) and (vi)(A) and (B) which require the permitting authority to impose water quality based effluent limits where the discharges from an individual facility have "reasonable potential" to exceed a state water quality standard. Under these rules, if the permitting authority has reason to believe that a pollutant will contribute to an exceedance of the standard, a site-specific limit may be set. This existing rule is fully protective of water quality without the existence of a TMDL.

### **Response**

Pollutants of concern are selected in the Final TMDL based on receiving water quality, sediment toxicity, fish advisories, and historical listing of pollutants for which there is no weight of evidence that allows delisting. If pollutants of concern have been selected when, in fact, pollutant concentrations in the receiving water comply with applicable criteria, it is done so based on other data and information that indicates that Louisiana's water quality standards are not being met.

#### **Similar Comments**

009/0006 Citgo Petroleum Corporation

016/0018 PPG Industries, Inc.

**Comment**      **004/0008**      **Louisiana Chemical Association**

Although LDEQ indicated that HCB, HCBd and PCBs should remain on the 303(d)list, this recommendation was solely due to the existence of a fish consumption advisory from the Louisiana Department of Health and Hospitals. There is no current evidence of impairment of Bayou d'Inde for these parameters even though the Department of Health and Hospitals is protectively continuing the advisory. In fact, water sampling has not detected HCB or HCBd for over 4 years.

**Response**

EPA has delisted several pollutants for Calcasieu Estuary subsegments when there is a weight of evidence that no impairment exists. While it is acknowledged that recent data indicate that hexachlorobutadiene, hexachlorobenzene, and PCBs have not been detected in the Bayou D'Inde water column, the failure to detect a pollutant at minimum detection levels that are several orders of magnitude greater than the water quality criteria does not demonstrate that water quality criteria are being achieved in the light of other information such as the fish advisory. The Louisiana Department of Health and Hospitals is appropriately maintaining the fish advisory for Bayou D'Inde until it is shown that the advisory is no longer necessary. Similarly, wasteload allocations for these pollutants provide a measure of protection to ensure that the advisory is ultimately removed.

**Similar Comments**

009/0007      Citgo Petroleum Corporation  
016/0017      PPG Industries, Inc.

**Comment**      **004/0009**      **Louisiana Chemical Association**

Further, PCBs are banned from manufacture and most uses under the federal Toxic Substances Control Act, so such regulations provide reasonable assurance that this pollutant will not be an ongoing issue. TMDLs, which address ongoing discharges, are simply unwarranted as they have no impact on water quality.

**Response**

While it is acknowledged that the production of PCBs as a commercial product has been illegal for many years, PCBs can and are produced during the production of other compounds. For example, it has been documented that trace quantities of PCBs can be produced during the manufacture of chlorinated hydrocarbon compounds (e.g., 1,1,1-trichloroethylene, tetrachloroethylene, carbon tetrachloride) in the presence of catalysts or at high temperatures (National Study of Chemical Residues in Fish, Vol. II. U.S. EPA, September 1992. EPA 823-R-92-008b). Similarly, for discharges to Patrick Bayou, Texas, PCB 1248 exceeded levels protective of water quality standards in several discharges from facilities manufacturing organic chemicals. (Parsons Engineering Science. 2000. Final Report, Patrick Bayou Pollutant Source Study. Prepared for Lubrizol, OxyVinyls and Shell Oil Company. June 2000). PCBs also may be discharged through nonpoint sources, including urban runoff. EPA believes that continued diligence in assessing discharges for this parameter is warranted.

**Similar Comments**

004/0095      Louisiana Chemical Association  
009/0008      Citgo Petroleum Corporation  
016/0039      PPG Industries, Inc.

**Comment**      **004/0010**      **Louisiana Chemical Association**

EPA proposed TMDLs for metals without performing data gathering using clean techniques. This is an invalid scientific approach when EPA is clearly aware that use of data gathered using clean techniques would likely demonstrate that no impairment exists.

**Response**

Certainly clean techniques will not ensure that no impairment exists. For example, clean techniques data submitted by LDEQ for Bayou Verdine indicates that 3 of 12 samples do not meet the marine dissolved criterion for copper. The same data shows that one sample exceeds the criterion in Bayou D'Inde. See also response to comment 002/0003.

**Similar Comments**

009/0009 Citgo Petroleum Corporation  
013/0010 Louisiana Mid-Continent Oil & Gas Association

**Comment 004/0011 Louisiana Chemical Association**

On August 20, 2001, LDEQ provided “clean techniques” sampling data to EPA demonstrating that there were no exceedances of the aquatic copper criteria in Bayou D’Inde, Bayou Verdine, and the Calcasieu Ship Channel. (The original of this submittal is in EPA Region 6’s files. LCA requests that EPA include the original submittal, or a copy thereof, in the official administrative record for this TMDL proceeding.) However, EPA’s contractor apparently did not receive or did not consider this data for these waterbodies although similar data was used as a basis for delisting copper in other waterbodies. The data provided by LDEQ to EPA in August 2001 was developed from a report commissioned by PPG titled “A Final Report for Trace Metals “Clean Technique” Sampling and Laboratory Analysis, CK Associates, Inc., March 2001.”

**Response**

This information was provided by EPA and was provided by PPG Industries, Inc. in comments on the Draft TMDL and is part of the administrative record. The data it contains have been added to Appendix B. See also response to comment 002/0003. It should be noted however, that this data did not demonstrate no exceedances for Cu in Bayou Verdine. Three of twelve samples submitted were above the marine criterion for copper.

**Similar Comments**

005/0005 Equistar

**Comment 004/0012 Louisiana Chemical Association**

EPA proposed TMDLs/WLAs for copper, mercury and nickel were based upon data collected and analyzed without use of “clean techniques.” As noted above, data collected using clean techniques was already been provided to EPA by LDEQ in August 2001, but apparently was not considered in the study. This data showed that there is no exceedance of the aquatic copper criteria and that Bayou d’Inde should thus be delisted for copper. The “dirty” data used by the EPA contractor showed nickel detected above the criteria in less than 10% of the samples. In light of this data, Louisiana Water Quality Standards (“LWQS”) indicate that clean techniques or ultra-clean techniques must be used when other data indicate that a criteria may be exceeded. LAC 33:IX.1113.C.6.f provides: The use of clean or ultra-clean techniques may be required to definitively assess ambient levels of some pollutants (e.g., EPA method 1669 for metals) or to assess such pollutants when numeric or narrative water quality standards are not being attained. Clean and ultra-clean techniques are defined in LAC33:IX.1105. The relevant definitions of “clean” and “ultra-clean” in LAC33:IX.1105 provide: Clean Techniques—those requirements (or practices for sample collection and handling) necessary to produce reliable analytical data in the microgram per liter (µg/L) or part per billion (ppb) range. Ultra-Clean Techniques—those requirements or practices necessary to produce reliable analytical data in the nanogram per liter (ng/L) or part per trillion (ppt) range.

**Response**

It is acknowledged that clean techniques are required when analyzing waters that contain pollutants at levels approaching the detection limits of conventional techniques. EPA believes that discounting entire databases analyzed with conventional techniques, and evaluated using rigorous quality control measures, is unfounded. There is no compelling evidence that data quality of those databases was compromised. See also response to comment 002/0003.

**Similar Comments**

009/0011 Citgo Petroleum Corporation  
016/0015 PPG Industries, Inc.  
016/0054 PPG Industries, Inc.

**Comment 004/0014 Louisiana Chemical Association**

With respect to mercury, EPA did not use ultra-clean techniques. Further, while EPA apparently detected mercury in the ambient water, it has not yet identified any exceedance of the chronic aquatic protection standard because it

did not perform any fish testing. LDEQ's aquatic protection criteria requires fish testing for implementation. LAC 33:IX.1113 Table 3 note 11. EPA data developed in Phase II of the Calcasieu Estuary Superfund Study support LCA's conclusion that there is no exceedance of the aquatic protection criteria. Thus, the TMDL for mercury should be withdrawn.

### **Response**

The citation referred to in the comment is as follows:

"If the four-day average concentration for total mercury exceeds 0.012 mg/L in freshwater or 0.025 µg/L in saltwater more than once in a three-year period, the edible portion of aquatic species of concern must be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level (1.0 mg/kg). If the FDA action level is exceeded, the state must notify the appropriate EPA Regional Administrator, initiate a revision of its mercury criterion in its water quality standards so as to protect designated uses, and take other appropriate action such as issuance of a fish consumption advisory for the affected area."

The purpose of the fish testing, as explicitly stated in this quote, is not to determine whether there is, in fact, an exceedance, but to determine whether EPA should be notified or whether other appropriate action, such as issue a fish consumption advisory should be taken.

Water column exceedances of mercury are independently assessed against the water column criterion. The lack of fish tissue information does not preclude the establishment of a TMDL to meet a water column criterion.

### **Similar Comments**

004/0103	Louisiana Chemical Association
007/0031	Sasol North America, Inc.
009/0013	Citgo Petroleum Corporation
009/0091	Citgo Petroleum Corporation
016/0016	PPG Industries, Inc.
016/0051	PPG Industries, Inc.

### **Comment      004/0016      Louisiana Chemical Association**

The treatment of discharge data grossly over-estimated loadings in many cases by ignoring non-detected values in facilities' discharge monitoring reports and/or presuming that pollutants were present when "zero" values were reported for pollutant concentrations below the analyte method detection limit.

### **Response**

The method used to determine the loadings is explicitly described. If a pollutant was never detected in an effluent, it is characterized as not detected. A zero value (representing a nondetect) does not signify that the pollutant is absent from the effluent, only that it is not detected. Without knowledge of the detection limits used for the nondetected data, there is no basis for using conventional methods (such as representing nondetects at 1/2 the detection level) to calculate an average load. The maximum load is what it is reported to be.

Note that existing loads do not factor into the calculation of wasteload allocations. They are presented for informational purposes only.

### **Similar Comments**

009/0015	Citgo Petroleum Corporation
016/0030	PPG Industries, Inc.

### **Comment      004/0017      Louisiana Chemical Association**

EPA misused data from the LDEQ Ambient Water Quality Network. All "non-detects" ("ND"s) were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the mean of detects, only.

EPA misused data from the National Oceanic and Atmospheric Administration's Calcasieu database. All NDs were ignored. In several instances, the majority of data entries were ND. Water quality criteria were compared to the



mean of detects, only.

### **Response**

The commenter is incorrect in the assumption that the mean of detected values was the only value compared against criterion values. In the analysis, each individual observation was compared against aquatic life criteria. Nondetects, however, were not counted in this comparison. The mean of detected values was compared against human health criteria. Three pollutants had means of detected values greater than the human health criterion: 1,2-dichloroethane in Bayou Verdine, and heptachlor and PCBs in Bayou D'Inde. 1,2-dichloroethane was detected in 8 of 9 samples taken, and the mean value is approximately 7 times the human health criterion value. This is a reasonable determination that the human health criterion for 1,2-dichloroethane is exceeded in Bayou Verdine. The mean values for both heptachlor and PCBs were based on only one value and were ignored.

### **Similar Comments**

009/0016     Citgo Petroleum Corporation  
016/0033     PPG Industries, Inc.

### **Comment     004/0019     Louisiana Chemical Association**

EPA may have inappropriately determined point source loadings. It is unclear whether EPA used permit limits or average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA states says both in the Executive Summary of the Draft Total Maximum Daily Load for Toxics for the Calcasieu Estuary (the "Draft TMDL Document"), p. ES2.

### **Response**

The context of this comment is not clear. In fact, both were done. The results were used for informational purposes only. Existing loads do not materially affect wasteload allocations in this TMDL.

### **Similar Comments**

009/0018     Citgo Petroleum Corporation

### **Comment     004/0020     Louisiana Chemical Association**

Nothing in the Draft TMDL Document indicates which years of facility data were reviewed and why that time period was deemed sufficiently representative of normal, authorized plant operations.

### **Response**

Acknowledged. This information is included in the Final TMDL.

### **Similar Comments**

009/0019     Citgo Petroleum Corporation

### **Comment     004/0021     Louisiana Chemical Association**

EPA may have inappropriately determined nonpoint source contributions and failed to consider reductions in nonpoint source loadings.

### **Response**

The TMDL process requires an assessment of point source and nonpoint source loads.

### **Similar Comments**

009/0020     Citgo Petroleum Corporation

### **Comment     004/0022     Louisiana Chemical Association**

The TMDL mass balance methodology used by EPA is overly simplistic, particularly for a system as hydraulically complex as the Calcasieu Estuary. Such complexity requires fate and transport modeling to generate scientifically acceptable TMDLs. This modeling should include hydrodynamics and water column/sediment pollutant interactions.

EPA used a mass balance approach to model toxic pollutants in the Calcasieu Estuary system. The mass balance approach is most problematic for simulating compliance with water quality criteria that have a short-term exposure basis, e.g., acute and chronic aquatic life criteria. A mass balance across an entire surface water subsegment that is miles in length and contains islands and looping channels (e.g., the Upper Calcasieu Estuary and Ship Channel) is inadequate for demonstrating compliance with water quality criteria. The mass balance analysis is especially problematic for aquatic life criteria because temporal-spatial concentration differences must be properly simulated to assure that wasteload allocations are protective, but not overly so. The water quality criteria and implementation methods of the LDEQ are designed to assure that the standards are met at all places in the waterbody, but the TMDL approach used by EPA fails to accomplish this objective.

### **Response**

EPA acknowledges the limitations of a mass balance approach involving a system as complex as the Calcasieu Estuary. But it must be noted that this is the best approach that could be applied given the time, resources, and available data. Given uncertainties about the dynamics of the estuary, it is not clear whether the approach is conservative or not. EPA encourages permittees and other interested parties to improve on the understanding of this system, particularly with regard to system hydrology, in order to ensure that any future wasteload allocations are environmentally protective and equitable among dischargers.

#### **Similar Comments**

007/0003	Sasol North America, Inc.
007/0005	Sasol North America, Inc.
009/0021	Citgo Petroleum Corporation
013/0020	Louisiana Mid-Continent Oil & Gas Association
014/0052	Conoco Inc.
016/0022	PPG Industries, Inc.

#### **Comment      004/0023      Louisiana Chemical Association**

The hydrodynamics of a surface waterbody determine the transport of chemicals and particulates. As described in the Draft TMDL Document, the Calcasieu Estuary, with its ship channel, islands, lakes, and tributary bayous has very complex hydraulics and pollutant transport. Rather than justifying the simplifying assumption of a mass balance, this complexity demands development of a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants. The foundation of a TMDL is the ability to satisfactorily simulate the hydraulics of the surface waterbody of concern. This has not been done for the Proposed TMDLs.

### **Response**

As the commenter noted, the Calcasieu is a very complex system. Data for the system are extremely limited. While a model of the system exists (RECEIVE II), when the model was originally developed, the developer indicated that there were severe data limitations. These limitations persist. A systematic effort is needed to develop and refine the data that go into the model.

EPA encourages activities that refine the capabilities of the RECEIVE II model or other suitable models so that it/they can be reliably used for wasteload allocation decisions in the Calcasieu. This effort, however, will require considerable information gathering, calibration, and verification. Therefore, applications of these models may be more appropriate in future TMDLs for the estuary.

#### **Similar Comments**

007/0006	Sasol North America, Inc.
009/0022	Citgo Petroleum Corporation

#### **Comment      004/0024      Louisiana Chemical Association**

Another major deficiency of the TMDLs performed by EPA is the failure of the mass balance to account for pollutant fate including both water column-sediment interactions, partitioning of pollutants to solids, and processes such as biodegradation and volatilization. These processes are not considered in the Draft TMDL Document, but are necessary in order to develop technically supported wasteload allocations.

**Response**

In the attempts to develop a technically defensible water quality model for the Calcasieu, the interactions mentioned in this comment were evaluated under a variety of flow conditions. Even under the very low net downstream flows that were used in the Draft TMDL, transport by water movement was by far the most significant process that determined concentrations in receiving waters. Adding in other processes, either individually or in combination, changed the receiving water concentration by less than 0.1%. While the other processes can be added as a model refinement at some time in the future, decisions based on model results using water flow alone would not be changed with their addition.

**Similar Comments**

007/0007 Sasol North America, Inc.  
 009/0023 Citgo Petroleum Corporation  
 016/0059 PPG Industries, Inc.

**Comment      004/0025      Louisiana Chemical Association**

EPA needs to correct errors in the segment flow.

**Response**

Flows used to determine wasteload allocations have been changed in the Final TMDL to incorporate tidal flow components.

**Similar Comments**

005/0051 Equistar  
 006/0045 Lyondell Chemical Company  
 009/0024 Citgo Petroleum Corporation  
 013/0014 Louisiana Mid-Continent Oil & Gas Association  
 014/0053 Conoco Inc.  
 015/0051 Firestone Polymers

**Comment      004/0026      Louisiana Chemical Association**

EPA needs to correct errors in facility outfall flow.

**Response**

The flows used in wasteload allocations were reviewed based on information contained in existing permits, fact sheets, permit applications, and reported discharges. Note that there is a substantial difference between total facility flows (that include stormwater and cooling water outfalls) and process water flows. To the extent they are separable in existing data, only process water flows were used in determining wasteload allocations.

**Similar Comments**

004/0029 Louisiana Chemical Association  
 005/0048 Equistar  
 005/0052 Equistar  
 006/0042 Lyondell Chemical Company  
 006/0046 Lyondell Chemical Company  
 009/0026 Citgo Petroleum Corporation  
 009/0032 Citgo Petroleum Corporation  
 014/0048 Conoco Inc.  
 014/0054 Conoco Inc.  
 015/0047 Firestone Polymers  
 015/0052 Firestone Polymers

**Comment      004/0027      Louisiana Chemical Association**

EPA needs to substitute statistically valid estimates of facility flows for all stormwater driven TMDL mass balance

calculations. EPA's method for estimating facility maximum discharge (for use with chronic toxicity pollutant of concern ("POC") TMDLs) is arbitrary and does not reflect reasonable, statistically-based estimates. Maximum flows are associated with stormwater discharges. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate facility flow estimates for stormwater events.

### **Response**

It is accepted that an appropriate statistical approach for stormwater discharges is necessary to develop load allocations for stormwater. The wasteload allocations in the Draft and Final TMDL are based solely on process flows. Stormwater flows and pollutant contributions were not included. Once-through non-contact cooling water was also not included when determining wasteload allocations.

#### **Similar Comments**

005/0054	Equistar
006/0048	Lyondell Chemical Company
009/0027	Citgo Petroleum Corporation
014/0056	Conoco Inc.
015/0054	Firestone Polymers

### **Comment      004/0028      Louisiana Chemical Association**

Point Source Flow Information. EPA's information on the location of several major point-source discharge outfalls contain numerous significant errors. These errors include:

Concoco--primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).  
 Sasol North America, Inc. (formerly CONDEA Vista)--permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).  
 Citgo--outfalls for CitCon portion of operations (001, 002, 012) to Bayou D'Inde (Segment 030901) were not included.  
 Lyondell--stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.  
 PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

### **Response**

Based on a number of comments about discharge locations, the receiving water for all outfalls was reviewed using permits and fact sheets for all significant discharges. Changes have been made in the Final TMDL to correct discharge locations.

#### **Similar Comments**

005/0047	Equistar
006/0041	Lyondell Chemical Company
014/0047	Conoco Inc.
015/0047	Firestone Polymers

### **Comment      004/0030      Louisiana Chemical Association**

EPA's estimates of average maximum flow for most major point-source discharge outfalls contain numerous significant errors. EPA's estimates of maximum flow contain similar errors. Since these errors reflect only a partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary dischargers to ensure that they are developing appropriate estimates of maximum flows for each segment.

### **Response**

EPA's estimates of average and maximum flows are based on:

1. Discharge data reported to Louisiana and EPA;
2. Facility permits;

3. Permit fact sheets; and
4. Permit applications (in a limited number of cases).

The majority of the data were obtained from reported discharges between 1/1/98 and 12/31/00. The data reported in the Final TMDL are reported by outfall, to avoid confusion about which flows are included in the calculations and which are not. Note that cooling water and stormwater flows were always excluded (to the extent that they are separable at a given facility) from the estimation of flows. Average flows are generally consistent (within a few percent) of flows reported in permits or fact sheets. Maximum flows are generally considerably larger than average flows, primarily because of stormwater contributions to many process outfalls.

#### **Similar Comments**

005/0049	Equistar
006/0043	Lyondell Chemical Company
009/0030	Citgo Petroleum Corporation
009/0033	Citgo Petroleum Corporation
014/0049	Conoco Inc.
015/0049	Firestone Polymers

#### **Comment      004/0031      Louisiana Chemical Association**

EPA should determine discharge maximum flows for use in chronic toxicity TDMLs using a statistically valid approach. EPA's estimate of average monthly maximum discharge flow is arbitrary. A statistically valid representation of maximum flow for an appropriate return period should be determined. This is particularly important since a significant portion of some facilities' loads may be associated with stormwater discharges.

#### **Response**

In determining wasteload allocations, average process flows are used in recognition of the fact that stormwater flows contribute significantly to maximum flows.

#### **Similar Comments**

005/0050	Equistar
006/0044	Lyondell Chemical Company
009/0034	Citgo Petroleum Corporation
014/0050	Conoco Inc.
015/0050	Firestone Polymers

#### **Comment      004/0033      Louisiana Chemical Association**

EPA has not addressed information submitted by LDEQ which provides a basis for "delisting" copper. LDEQ (in a letter to EPA dated August 20, 2001) provided information for delisting of copper from the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901).

#### **Response**

The data submitted by LDEQ have been added to Appendix B. See also response to comment 002/0004.

#### **Similar Comments**

005/0008	Equistar
006/0002	Lyondell Chemical Company
009/0036	Citgo Petroleum Corporation
014/0011	Conoco Inc.
015/0008	Firestone Polymers

#### **Comment      004/0034      Louisiana Chemical Association**

LDEQ (in a letter to EPA dated October 10, 2001) provided information clarifying the listings of "priority organics" and "non-priority organics" for the Calcasieu Ship Channel (030301), Bayou Verdine (030304), and Bayou D'Inde (030901), and other segments. Based on this information LDEQ stated that the only POCs which are the suspected

cause of waterbody impairment are: Hexachlorobenzene, Hexachlorobutadiene, and PCBs for Bayou D'Inde (only). LDEQ stated that no other use impairments for organic POCs have been documented. LDEQ (in the same letter to EPA dated October 10, 2001) provided information clarifying the listings of "other inorganics" for Bayou D'Inde (030901). LDEQ stated that this listing was for general information purposes and not a listing for a specific parameter.

### **Response**

EPA used available data to determine pollutants of concern in categories included on the 303(d) list. EPA considered LDEQ's submission in the light of the fact that considerable data have become available since the time of the original listing. To the extent that more recent data supports the contention that the original listing covered the pollutants of concern and a waterbody is no longer impaired for those pollutants, EPA delisted the subsegment for the parameter.

#### **Similar Comments**

004/0048	Louisiana Chemical Association
005/0009	Equistar
006/0003	Lyondell Chemical Company
009/0037	Citgo Petroleum Corporation
009/0052	Citgo Petroleum Corporation
014/0012	Conoco Inc.
015/0009	Firestone Polymers
016/0010	PPG Industries, Inc.

#### **Comment      004/0035      Louisiana Chemical Association**

Notwithstanding the above, EPA has sought to select POCs for these "categorical" impairments by evaluating information from several studies of the Calcasieu Estuary area which were not designed to support TMDL determinations. In the Draft TMDL Document, EPA states that data from the following seven reports were reviewed and evaluated to identify POCs:

Toxics Study of the Lower Calcasieu River, Research Triangle Institute, March 1990.

Bayou D'Inde, Lower PPG Canal and Calcasieu River Ship Channel Water and Sediment Sampling Report, ChemRisk, 1995.

Focused Site Investigation, Bayou D'Inde, EPA, July 1996.

LDEQ, Calcasieu Estuary Water Sampling Program, 1987-1996.

Remedial Investigation/Feasibility Study of Calcasieu River Areas of Concern (AOC), Calcasieu Estuary Cooperative Site, Lake Charles, Louisiana, CDM 1999-2000.

Columbia Environmental Research Center, US Geological Survey, An Assessment of Risks Associated with Contaminated Sediments in the Calcasieu Estuary: Use of the Sediment Quality Triad (In Progress).

Calcasieu Estuary Remedial Investigation/Feasibility Study Baseline Ecological Risk Assessment, CDM, 2001.

In each case, these reports were the result of limited water and sediment quality investigations that were intended to focus on specific legacy contamination issues. These studies have a number of limitations which render them unsuitable for use in identifying TMDL POCs:

The sampling schemes--locations, depths, compositing, etc.--of these studies were primarily designed to evaluate known or suspected areas of contamination (i.e., "hot spots") within segments. The studies were not designed to provide, and do not provide, a statistically representative set of data for the respective segments. Absent a statistically valid sampling scheme (e.g., random sampling or grid sampling), the findings of POCs above reference levels is only indicative of localized contamination in the specific areas of investigation.

### **Response**

This comment implies that the only valid data for use in determining pollutants of concern is a statistically-based or grid-based sample design covering a complete subsegment. EPA disagrees with this statement. While it is acknowledged that some of the sampling focused on localized areas, the 1999-2000 Superfund data provided broad

general coverage of the estuary, and the sampling locations were determined by a grid. In some areas, Bayou D'Inde, for example, grid lines were closely spaced to obtain geographic resolution of sediment concentrations (see Appendix Figure C-2). In other areas, such as Prien Lake, grid lines were more widely spaced because geographic resolution was considered less important. The number of samples taken for any pollutant in any area were selected from the grid at random, with the total number of samples taken for any pollutant being allocated by the geographic detail required. These data present an overall assessment of each subsegment without over-representing "hot spots."

Where concentrations in either the water column or the sediments had exceedances of quality targets, locational information was used to determine any possible or likely continuing sources of pollutants. Thus, even if sampling was more intense in one area than another by chance, this information was taken into account when determining what facilities would required wasteload allocations.

#### **Similar Comments**

005/0002	Equistar
005/0010	Equistar
006/0004	Lyondell Chemical Company
006/0005	Lyondell Chemical Company
009/0038	Citgo Petroleum Corporation
009/0039	Citgo Petroleum Corporation
013/0009	Louisiana Mid-Continent Oil & Gas Association
014/0013	Conoco Inc.
015/0010	Firestone Polymers
015/0011	Firestone Polymers
016/0028	PPG Industries, Inc.

#### **Comment      004/0037      Louisiana Chemical Association**

EPA should eliminate selection of POCs solely based on localized "hot spot" sediment data:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)  
 4,4'-DDT, Bayou Verdine (030306)  
 Methoxychlor, Bayou Verdine (030306)  
 Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)  
 Zinc, Bayou Verdine (030306)  
 Calcium, Bayou Verdine (030306)

#### **Response**

It is not necessary for an entire subsegment to be uniformly impaired before a TMDL is required. By analogy, if the dissolved oxygen concentration in a particular segment is below the water quality criterion for oxygen at only one location, and that location occupies only a few hundred feet of a 10-mile long segment, a TMDL could be required if a combination of point and nonpoint sources contributed to the impairment. The same applies to toxic pollutants. In fact, the availability of only "hot spot" data could underestimate the extent of the impairment.

#### **Similar Comments**

005/0012	Equistar
006/0006	Lyondell Chemical Company
009/0040	Citgo Petroleum Corporation
014/0015	Conoco Inc.
015/0012	Firestone Polymers

#### **Comment      004/0038      Louisiana Chemical Association**

The LDEQ information referred to under Comment 7.c. above--combined with the absence of data showing presence in segment water or sediment above reference levels--should be sufficient grounds to delist the following POCs:

Phenol, Bayou Verdine (030306)

Bromoform, Bayou D'Inde (030901)

1,1, 2, 2 Tetrachloroethane, Bayou D'Inde (030901)

### **Response**

For pollutants specifically identified on the 303(d) list, EPA must give a positive demonstration, through at least a weight of evidence approach, that the pollutant is not reasonably expected to cause an impairment. Only 5 samples were analyzed for bromoform, 3 samples for 1,1,2,2-tetrachloroethane, and 1 sample for phenol. These data are inadequate to demonstrate that the subsegments are not impaired for the identified pollutants.

#### **Similar Comments**

005/0013	Equistar
006/0007	Lyondell Chemical Company
009/0041	Citgo Petroleum Corporation
014/0016	Conoco Inc.
015/0013	Firestone Polymers

### **Comment      004/0040      Louisiana Chemical Association**

In the Draft TMDL Document, EPA does not address whether the above studies relied upon by EPA found the POCs under conditions consistent with application of the reference level--such as those relevant to POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity.

### **Response**

The above studies assessed sediment concentrations of toxics in a manner consistent with EPA's assessment in the TMDL. Also, ESGs incorporate TOC as a mediating factor addressing bioavailability of non-polar organics.

In making a comparison between a water or sediment concentration to some reference level, it is not clear how POC fate, mobility, chemical form/stability, bioavailability, and biotoxicity apply. There is a limited possibility that the chemical form, bioavailability, and biotoxicity of specific pollutants are sufficiently different for the Calcasieu Estuary that the reference levels used do not apply. Sediment reference levels, however, are based on a range of environmental conditions that likely involve a wide variety of chemical forms and availabilities. Water quality human health values (especially for organic compounds) are determined independent of chemical form. There are procedures that can be used by affected parties for developing site-specific criteria for metals in the water column should pollutant form and toxicity be at issue. Absent a demonstration that there are location-specific factors that affect bioavailability and toxicity, the application of the reference levels used in the TMDL is appropriate.

#### **Similar Comments**

005/0015	Equistar
006/0009	Lyondell Chemical Company
009/0043	Citgo Petroleum Corporation
014/0018	Conoco Inc.
015/0015	Firestone Polymers

### **Comment      004/0041      Louisiana Chemical Association**

Water quality references levels are for dissolved concentrations and EPA should be evaluating only results for dissolved concentrations of POCs.

### **Response**

The Final TMDL relies only on the dissolved criteria for metals in Louisiana's water quality standards.

#### **Similar Comments**

005/0016	Equistar
006/0010	Lyondell Chemical Company
009/0044	Citgo Petroleum Corporation
013/0015	Louisiana Mid-Continent Oil & Gas Association



014/0019 Conoco Inc.  
015/0016 Firestone Polymers

**Comment 004/0042 Louisiana Chemical Association**

Reference levels for marine conditions should be applied to marine waters and reference levels for fresh water should be applied to samples from fresh water conditions.

**Response**

For purposes of application of water quality criteria, all of the subsegments covered in this document meet the definition of marine waters. Based on Louisiana's Water Quality Standards, marine water quality criteria apply.

**Similar Comments**

005/0017 Equistar  
006/0011 Lyondell Chemical Company  
009/0045 Citgo Petroleum Corporation  
014/0020 Conoco Inc.  
015/0017 Firestone Polymers

**Comment 004/0043 Louisiana Chemical Association**

Reference levels for fresh water must be adjusted for hardness.

**Response**

For purposes of application of water quality criteria, all of the subsegments covered in this document meet the definition of marine waters. Based on Louisiana's Water Quality Standards, marine water quality criteria apply. Marine criterion do not dependent upon water hardness values.

. See also response to comment 002/0027.

**Similar Comments**

005/0018 Equistar  
006/0012 Lyondell Chemical Company  
009/0046 Citgo Petroleum Corporation  
014/0021 Conoco Inc.  
015/0018 Firestone Polymers

**Comment 004/0045 Louisiana Chemical Association**

Reference levels that are not appropriate to local biota should not be used.

**Response**

Water quality criteria and sediment quality screening levels are appropriate for application to the Calcasieu Estuary as well as other estuarine waters. Louisiana may, as an alternative, adopt site-specific numeric criteria.

The applicability of reference levels to local biota can only be addressed through the development of site-specific criteria. Should any discharger wish to develop data and information that substantiates the application of a site-specific criterion, it is free to do so at any time.

**Similar Comments**

005/0020 Equistar  
006/0014 Lyondell Chemical Company  
009/0048 Citgo Petroleum Corporation  
014/0023 Conoco Inc.  
015/0020 Firestone Polymers

**Comment      004/0046      Louisiana Chemical Association**

Sediment reference levels should be adjusted based on sediment mineral type, soil type, AVS/SEM ratio, and other relevant characteristics. Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

**Response**

To the extent that reference levels are defined in terms of such parameters, they have been incorporated in their application in the Draft and Final TMDLs. For example, TOC concentrations were considered in the assessment of non-polar organics.

**Similar Comments**

005/0021    Equistar  
 006/0015    Lyondell Chemical Company  
 009/0049    Citgo Petroleum Corporation  
 014/0024    Conoco Inc.  
 015/0021    Firestone Polymers

**Comment      004/0047      Louisiana Chemical Association**

Selection of POCs is not appropriate absent a careful evaluation of specific water and sediment conditions under which the reference levels can be properly applied.

**Response**

The criteria and reference levels used in the assessment of pollutants of concern are all applicable to the Calcasieu Estuary, as they are applicable to a wide variety of estuarine systems in the nation.

**Similar Comments**

005/0022    Equistar  
 006/0016    Lyondell Chemical Company  
 009/0050    Citgo Petroleum Corporation  
 014/0025    Conoco Inc.  
 015/0022    Firestone Polymers

**Comment      004/0050      Louisiana Chemical Association**

Nonpriority organics - three subsegments (030302, 030306, and 030901) were originally listed for “nonpriority organics” and not for any specific pollutant. LDEQ indicated that this listing was intended to be a generic term for periodic oil spills. LDEQ indicated that because oil spills are episodic events more appropriately regulated through enforcement actions, they are not appropriate for TMDLs and that these subsegments were delisted for “nonpriority organics.” With respect to EPA’s proposed Draft TMDLs, this confirms that EPA is not authorized by the Clean Water Act nor the court ordered list to establish wasteload allocations for PAHs, methoxycylor or DDT based upon the generic listing for “nonpriority organics.” Thus, EPA’s sole asserted basis for imposing WLAs for these pollutants for Bayou Verdine (030306) and the Calcasieu River (030301) must rest on EPA’s ability to establish WLAs solely based on contaminated sediments. As discussed below, LCA does not believe that EPA has this legal authority.

Other Inorganics - Bayou d’Inde (030901) was listed on the 303(d) list for “other inorganics”. LDEQ discussed the meaning of this term as follows:

**Other Inorganics****Subsegment 030901 – Bayou D’Inde – Headwaters to Calcasieu River**

The term “other inorganics” was intended as a generic term for those non-metallic inorganic compounds that may occur in the water from brine discharges during oil and gas activities. No water quality sample was collected; therefore, no quantitative assessment was made. Non-metallic inorganic water quality parameters in brine discharges include chlorides, sulfates, total dissolved solids and salinity.

Since Bayou D'Inde is a natural estuarine waterbody frequently influenced by high salinity from the Gulf of Mexico, no water quality criteria for these parameters are set for the bayou in the Louisiana Water Quality Standards. The listing for "other inorganics" in subsegment 030901 was for general informational purposes and not a listing for impairment of water use by any specific parameters (Emphasis added.) Thus, it is clear that the term "other inorganics" does not include mercury or nickel. For this reason, EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for mercury and nickel for Bayou D'Inde.

#### **Response**

EPA has found no compelling evidence that Bayou D'Inde is impaired by any constituents that would represent the category of "other inorganic" pollutants. EPA has delisted other inorganics for Bayou D'Inde.

#### **Similar Comments**

009/0051 Citgo Petroleum Corporation  
016/0007 PPG Industries, Inc.

#### **Comment 004/0051 Louisiana Chemical Association**

EPA has proposed TMDLs for lead for the Calcasieu River (030301) and for copper at Contraband Bayou (030305). EPA does not have authority under the Clean Water Act or the court approved Consent Agreement to establish TMDLs for these pollutants at these water bodies as these substances are not on the court approved 303(d) list. Further, neither waterbody was listed for the generic category of "other inorganics." There is simply no basis for EPA to usurp LDEQ's authority to establish these TMDLs. Pursuant to section 303(d) of the CWA, LDEQ has primacy over these waters and such primacy has not been changed by the Consent Agreement.

#### **Response**

Those pollutants that are not specifically identified or covered by categories identified on the court-ordered 303(d) are not selected as pollutants of concern in the Final TMDL. If impairments are noted during the review process, this information will be provided to LDEQ for consideration for the October 2002, 303(d) list.

#### **Comment 004/0052 Louisiana Chemical Association**

EPA has not provided the public with adequate notice of the selection of specific POCs to allow for comment on the "listing" process or the opportunity to provide additional sampling and evaluations. Interested parties in the Lake Charles area have demonstrated the willingness to undertake detailed sampling studies--e.g., using "clean techniques"--for specific POCs that had previously been identified in the 303(d) list (e.g., copper). Interested parties in the Lake Charles area would like to have an opportunity to provide additional data on each of the 19 selected POCs, prior to EPA's final determination on the Proposed TMDLs.

#### **Response**

The development of TMDLs for a variety of pollutants in the Calcasieu Estuary will result, in the first instance, in the development of additional data on the magnitude and extent of water quality exceedances and the discharges of pollutants of concern. Review of the additional data may indicate either that receiving waters are not, in fact, impaired, or that many dischargers do not discharge pollutants at concentrations that result in receiving water impairment. EPA appreciates industry willingness to provide additional data and accepts that additional data are often necessary. However, it is unable, due to consent decree commitments, to delay the TMDLs while additional data are being collected.

#### **Similar Comments**

005/0023 Equistar  
006/0017 Lyondell Chemical Company  
009/0053 Citgo Petroleum Corporation  
014/0010 Conoco Inc.  
015/0023 Firestone Polymers

**Comment**      **004/0053**      **Louisiana Chemical Association**

EPA's "flagging method" for identifying POCs from previous investigation data is not appropriate for a final TMDL determination. As explained on page ES-1 of the Draft TMDL Document, EPA has used a simple screening method to select POCs:

(i) pollutants with more than one exceedance of chronic water quality criteria, or with the mean of detected values exceeding human health criteria; and (ii) pollutants with sediment concentrations exceeding ESGs or ERM for 10% or more of samples. This selection scheme is commonly used as a "screening" technique for identifying POCs which will then be the subject of a more rigorous, statistically robust investigation. The results of this subsequent phase of investigation are then used for decision-making purposes (e.g., formal risk assessment, remedial decisions, treatment decisions, etc.). The use of a screening technique for making final selection of POCs for TMDL development is wholly inappropriate and has no scientific basis. It is also inconsistent with established EPA guidance and nationally recognized methodologies for pollution or contamination management. The NRC Report states: "Statistical inference procedures must be used on the sample data to test hypotheses about whether the actual condition of the waterbody meets the criterion."

**Response**

The procedure that is used to assess water column data is consistent with Louisiana's protocol. Also, assessment using sediment guidelines is consistent with Louisiana's protocol from an exceedance standpoint. The "flagging" method is based on an extensive data assessment that EPA believes is technically supportable.

Available data were evaluated to determine whether impairment existed due to exceedances of water quality criteria or sediment quality targets. Concentrations above water quality criteria or sediment quality targets are known to affect human health or the health of the aquatic ecosystem. Because of the variability in pollutant concentrations in receiving waters, a low number of exceedances was used. If occasional exceedances are detected, impairment of the water column is often much more extensive than data suggest. In many cases, however, a very large number of exceedances were observed.

The NRC Report recommends many technically sound approaches to improving TMDL development. The report also recommends that lack of guidance or methods at present is not a rationale for delaying TMDL development. EPA has applied current tools to establish these TMDLs in a defensible framework. The TMDL also outlines a future monitoring program which will further aid in assessing the degree of impairment and pollutant sources.

**Similar Comments**

005/0024	Equistar
006/0018	Lyondell Chemical Company
009/0054	Citgo Petroleum Corporation
014/0026	Conoco Inc.
015/0024	Firestone Polymers

**Comment**      **004/0057**      **Louisiana Chemical Association**

To evaluate a set of results for comparison with a reference level, good scientific, statistical practice requires an appropriate estimate of central tendency--appropriate to the type distribution--and use of this as the benchmark for comparison. (Nonparametric statistical techniques may be appropriate for certain data distributions.)

**Response**

Except for human health criteria, measures of central tendency have no relevance in determining exceedances of water quality criteria.

**Similar Comments**

005/0028	Equistar
006/0022	Lyondell Chemical Company
009/0058	Citgo Petroleum Corporation
014/0030	Conoco Inc.
015/0028	Firestone Polymers

**Comment      004/0058      Louisiana Chemical Association**

Good scientific practice also requires that nondetect values be assigned a surrogate value consistent with the data quality and general nature of the evaluation. Calculation of the “mean of detected values” is not appropriate since it biases the evaluation.

**Response**

Use of surrogate values is only relevant when measures of central tendency are germane to decision making. The only place this is relevant is in assessment of compliance with human health criteria. See also response to comment 004/0017.

**Similar Comments**

005/0029    Equistar  
006/0023    Lyondell Chemical Company  
009/0059    Citgo Petroleum Corporation  
014/0031    Conoco Inc.  
015/0029    Firestone Polymers

**Comment      004/0059      Louisiana Chemical Association**

EPA’s use of sediment results and sediment reference levels is not appropriate to selection of POCs for a TMDL determination.

Recent investigations suggest that most sediment POC contamination, where it does exist, is the result of past, localized, historic events or practices. Given the regional sedimentation conditions in the estuary, contaminated sediments are probably undergoing active burial.

**Response**

It is acknowledged that contaminated sediments may be the result of historical discharges only, but there are no data that demonstrate that current discharges are not contributing to sediment contamination. Absent this demonstration, an approach that allows the evaluation of the effect current discharges are having on sediment contamination is adopted in the Final TMDLs.

It is accepted that available data indicate that sediment levels for some pollutants are declining, and burial of the sediments is likely one of the most important processes that are causing the reduction.

**Similar Comments**

005/0030    Equistar  
006/0024    Lyondell Chemical Company  
009/0060    Citgo Petroleum Corporation  
014/0032    Conoco Inc.  
015/0030    Firestone Polymers

**Comment      004/0060      Louisiana Chemical Association**

There is no information presented on whether the investigation sediment data reflects conditions of sediments currently exposed to the water column. Sediment quality data are not correlated to any deposition dating information. It is likely that most areas of contaminated sediments are buried under more recently deposited sediments and not exposed to the water column. Covers as thin as a fraction of an inch can provide an effective barrier to sediment contamination mobility.

**Response**

While simple diffusion of pollutants from sediments to the water column would be substantially reduced by a thin cover of “clean” sediment, underlying sediments would still be toxic to aquatic organisms, in violation of Louisiana’s “free from toxics in toxic amounts” standard, and organisms would likely mobilize sediment pollutants to the water through their activity.

**Similar Comments**

005/0031 Equistar  
 006/0025 Lyondell Chemical Company  
 009/0061 Citgo Petroleum Corporation  
 013/0011 Louisiana Mid-Continent Oil & Gas Association  
 014/0033 Conoco Inc.  
 015/0031 Firestone Polymers

**Comment      004/0061      Louisiana Chemical Association**

EPA does not present any scientific evidence that sediment conditions are substantially affecting water quality. Given that the TMDL endpoints are water quality criteria for dissolved concentrations, EPA should present a detailed justification--based on scientifically valid, statistically representative, segment-specific data--for using sediment conditions as a basis for inferring the need for water column POCs and TMDLs.

**Response**

Sediment serves as a relatively stable indicator of pollutant loading. Elevated concentrations in surficial sediments may indicate active loading. Monitoring contained in the TMDL will quantify the degree of pollutant loading that is occurring. Contaminated sediments may or may not be affecting the water column. Louisiana's narrative toxicity standard applies equally to sediments (LAC 33:IX.1113.A.5).

**Similar Comments**

005/0032 Equistar  
 006/0026 Lyondell Chemical Company  
 009/0062 Citgo Petroleum Corporation  
 014/0034 Conoco Inc.  
 015/0032 Firestone Polymers

**Comment      004/0062      Louisiana Chemical Association**

ESGs and ERMs are not promulgated standards for protection of water quality and therefore should not be used as sole references for the selection of POCs. EPA should remove the following POCs since sediment results were the only basis for their selection:

Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)  
 4,4'-DDT, Bayou Verdine (030306)  
 Methoxychlor, Bayou Verdine (030306)  
 Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Bayou Verdine (030306)  
 Zinc, Bayou Verdine (030306)  
 Calcium, Bayou Verdine (030306)

**Response**

EPA acknowledges that ESGs and ERMs are not regulatorily-defined levels, yet they are the best indicators available as to what pollutants may be contributing to sediment toxicity. For two of the pollutants identified (DDT and methoxychlor) by comparison with sediment quality targets, no TMDLs are developed because the expected source of these pollutants is either historical runoff or runoff from a historically contaminated site(s).

The other pollutants listed (PAHs, calcium, and zinc) could be the result of historical contamination, or current discharges could be contributing to observed levels. The setting of wasteload allocations for these pollutants is a precautionary action.

**Similar Comments**

004/0075 Louisiana Chemical Association  
 005/0033 Equistar  
 006/0027 Lyondell Chemical Company  
 007/0004 Sasol North America, Inc.

007/0013 Sasol North America, Inc.  
 007/0034 Sasol North America, Inc.  
 009/0063 Citgo Petroleum Corporation  
 009/0070 Citgo Petroleum Corporation  
 014/0035 Conoco Inc.  
 015/0033 Firestone Polymers  
 016/0062 PPG Industries, Inc.

**Comment      004/0063      Louisiana Chemical Association**

The NRC Report specifically recommends movement of waterbodies from a preliminary list to an action list on the basis of narrative criteria.

**Response**

The court-ordered list underwent a previous public review. There is no provision to take portions of this list to provide a "preliminary" list. EPA is required to complete TMDLs for the listed waters by May 31, 2002.

**Similar Comments**

005/0034 Equistar  
 006/0028 Lyondell Chemical Company  
 009/0064 Citgo Petroleum Corporation  
 014/0036 Conoco Inc.  
 015/0034 Firestone Polymers

**Comment      004/0064      Louisiana Chemical Association**

ESGs and ERMs are not promulgated standards for protection of water quality and, absent a rigorous scientific justification, should not be used as supporting references for the selection of POCs. EPA should eliminate consideration of sediment results in the determination of whether the following compounds warrant selection as POCs:

Mercury, Bayou D'Inde (030901)  
 Mercury, Calcasieu Ship Channel (030301)  
 Benzo(a)anthracene and Benzo(a)pyrene, Calcasieu Ship Channel (030301)

**Response**

Mercury would have been selected as a pollutant of concern in the Calcasieu Estuary and Ship Channel irrespective of sediment contamination levels for mercury. The high percentage of sediments that exceed the mercury ERM in Bayou D'Inde simply reinforce the fact that a mercury TMDL is needed in this waterbody.

For PAHs, see response to comment 004/0062.

**Similar Comments**

005/0035 Equistar  
 006/0029 Lyondell Chemical Company  
 009/0065 Citgo Petroleum Corporation  
 014/0037 Conoco Inc.  
 015/0035 Firestone Polymers

**Comment      004/0065      Louisiana Chemical Association**

Under Section 303 of the Clean Water Act and the TMDL process, EPA is not authorized to establish waste load allocations simply to address sediment. EPA may establish WLA's to ensure compliance with the state ambient water quality criteria in the water column. The touchstone under the Clean Water Act for a TMDL to be authorized is a finding that controls on point sources or non-point sources beyond technology based limitations are necessary to achieve the state water quality standard. Section 303 requires that more stringent, water quality- based discharge limits be imposed only where it is demonstrated that technology limits are insufficient to meet water quality standards in waterbody segment. The whole purpose of the TMDL is to determine what more stringent requirements

should be applied to the effluent discharges of point sources and non-point sources.

Where the EPA seeks to establish a WLA (which is to be translated into numerical or best management practices limits on point sources more stringent than technology based standards) solely due to the alleged presence of contaminated sediment, EPA must prove not only that the contaminated sediment is presently contributing to an exceedance of the ambient water quality criteria, but also that controls on the point sources or specified non-point sources will achieve the criteria. Where, as in the proposed TMDLs at issue in this proceeding, EPA has not demonstrated that the sediment is contributing to ambient water quality problems, it cannot be determined whether controls more stringent than technology based controls on point sources or non-point sources will assist in rectifying the problem.

#### **Response**

EPA's TMDL regulations require that for the purposes of listing waters under section 130.7(b)(1), all applicable water quality standards includes numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements. EPA regulations at 40 CFR 130.7(C)(1)(ii) require that "TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards as identified pursuant to paragraph (b)(1)." The TMDLs are all designed to address water column standards. Louisiana's water quality standards include sediments in the narrative toxicity standard, strengthening the legal basis for establishing a TMDL when the sediments are demonstrably toxic. A benefit of assuring compliance with water column criteria is that it may aid in addressing pollutant sources that contribute to sediment contamination.

#### **Comment      004/0067      Louisiana Chemical Association**

The method used in the Draft TMDL Document to calculate wasteload allocations for sediment contaminants (PAHs, pesticides, etc.) has no scientific basis because it does not relate pollutant loads in the water column to concentrations in the sediment. EPA assumes in the draft TMDL that if the water quality criteria for organic chemicals and metals are achieved, the sediment targets will also be achieved. This assumption has no scientific foundation and is not supported by any technical analysis in the Draft TMDL Document.

#### **Response**

Simple logic indicates that if a pollutant is not being discharged, it cannot contribute to sediment toxicity. We agree that guidance for addressing point and nonpoint sources of sediment contamination are lacking. EPA has opted to address the pollutants of concern in a fashion consistent with EPA's regulatory authority.

It is accepted that if water quality criteria are met (i.e., if wasteload allocations are met) pollutant levels in the water column may not provide protection of the sediments, particularly for hydrophobic pollutants such as PAHs. EPA has a legal basis to set effluent limits at levels that ensure water quality criteria are met, and the expectation is that if water quality criteria are met, then sediment contamination will also be controlled. Future monitoring will serve to evaluate the effectiveness of the TMDL in protecting sediment quality.

Should evidence be developed to the contrary, then alternative control approaches (such as periodic sediment remediation) might be needed to control sediment contamination.

#### **Similar Comments**

007/0028      Sasol North America, Inc.  
009/0089      Citgo Petroleum Corporation

#### **Comment      004/0068      Louisiana Chemical Association**

If the sediment concentrations are due to historic discharges (before current treatment was installed), then there is no correlation between the current point source discharges and the sediment pollutant concentrations.

EPA must evaluate and determine the cause and effect between organic chemical and metal concentrations in point and nonpoint discharges, the water column, and sediments before it can perform the TMDL for sediments. It has not done this, so the Proposed TMDLs are fatally flawed with respect to the evaluation of sediments.

#### **Response**



EPA believes that it is possible that historic practices may be a significant contributor to sediment concerns. But, EPA thinks it is prudent to ensure that current discharges are not causing water quality problems and not contributing to sediment contamination. This is especially critical considering Superfund's investment in remediating contaminated sediments in portions of the estuary.

**Comment**      **004/0070**      **Louisiana Chemical Association**

EPA has other legal authority to address contaminated sediments where the cause of the contamination is historic releases or other causes that will not be addressed by imposition of limitations on existing dischargers. The TMDL process is inappropriate and not legally authorized for the purpose of addressing contaminated sediments where such sediments have no impact on the ability of the water column to meet water quality criteria and/or where imposition of controls on existing dischargers has no impact on the sediments.

**Response**

EPA is using the other legal authority (CERCLA) to deal with sediment contamination issues. It also has the authority to take actions that ensure water quality standards are being met.

**Comment**      **004/0071**      **Louisiana Chemical Association**

Sediment quality guidance values and EPA's national water quality criteria cannot be used for a TMDL because they have not been adopted as provisions of LDEQ's water quality standards. EPA has used the LDEQ surface water quality standards (LAC 33:IX.1101-1123) as compliance targets for the Proposed TMDLs. The LDEQ criteria are appropriate for this purpose because they were adopted by LDEQ through formal rulemaking, including public comment, and have been approved by EPA.

**Response**

The real issue is how the sediment quality targets are used. They are used solely to identify pollutants that are reasonably expected to contribute to sediment toxicity based on a large body of scientific evidence. Wasteload allocations are based on Louisiana's water quality criteria, and for PAHs, EPA's recommended water quality criteria. Sediment quality targets are not used to set wasteload allocations.

**Similar Comments**

007/0010      Sasol North America, Inc.  
009/0066      Citgo Petroleum Corporation

**Comment**      **004/0072**      **Louisiana Chemical Association**

EPA also used several other databases as TMDL targets for specific pollutants: (1) EPA national water quality criteria ("EPA WQC") (63 Fed. Reg. 68354, December 10, 1998); (2) effects range-median (ERM) values for sediments that were developed by the National Oceanic and Atmospheric Administration ("NOAA"); and EPA's equilibrium partitioning sediment guidelines (ESG). None of these databases that were used as TMDL targets have been adopted as Louisiana water quality criteria. They have no legal standing and have not been subject to public review and comment through a rulemaking process at either the national level or in Louisiana. Therefore, they cannot be legally used as TMDL targets unless EPA shows in the TMDL that they are correlated to water column or sediment toxicity, or bioaccumulation in aquatic animals, to a sufficient extent that they can be used in a cause-effect relationship to develop wasteload allocations ("WLA") and load allocations ("LA") for point and nonpoint sources, respectively.

**Response**

EPA's recommended water quality criteria have been subject to comment and review (63 FR 68354). It is accepted that ERMs and ESGs have no regulatory standing. But they are not used in setting wasteload or load allocations, only in determining the pollutants that may reasonably be expected to contribute to sediment toxicity, and therefore should be controlled through wasteload and load allocations based on numeric water quality criteria. Both ERMs and ESGs are scientifically supportable. These guidelines have been developed over the last 20 years and have been extensively peer-reviewed and published in peer-reviewed journals.

**Similar Comments**

007/0011 Sasol North America, Inc.  
009/0067 Citgo Petroleum Corporation

**Comment 004/0073 Louisiana Chemical Association**

Sediments can be listed as impaired based on measured toxicity and the LDEQ's narrative toxicity standard (LAC 33:IX.1113.B.5); however, a toxicity identification evaluation ("TIE") must be performed to identify the specific pollutant(s) causing the toxicity before a TMDL can be performed. EPA has not performed a TIE for sediments, or the water column, that identifies the pollutant or pollutants that are allegedly causing the measured toxicity.

**Response**

TIEs can sometimes be used to provide definitive evidence that a single pollutant is responsible for sediment toxicity. Generally, however, TIEs can only be used to define categories of compounds that cause toxicity in a given sediment. EPA conducted a TIE on Calcasieu Estuary sediments, and the TIE results are consistent with the identified sediment pollutants of concern. While this provides a weight of evidence that identified pollutants of concern are potentially responsible, it does not provide conclusive proof. Other pollutants within the toxic categories could also be contributing to sediment toxicity.

**Similar Comments**

007/0012 Sasol North America, Inc.  
009/0068 Citgo Petroleum Corporation

**Comment 004/0074 Louisiana Chemical Association**

Neither has EPA presented in the Draft TMDL Document any scientific analysis that demonstrates that the EPA WQC, NOAA ERM, or EPA ESG values have any relationship to the measured sediment and water column toxicity identified in certain segments of the estuary. Therefore, the use of these "targets" that are based on numeric levels in EPA and NOAA guidance that has never undergone review and comment as substitute water quality standards for Louisiana is unlawful and technically unsupported.

**Response**

ERMs and ESGs are not used to set wasteload allocations, only to identify pollutants of concern.

EPA's recommended water quality criteria are based on effects on human health and aquatic biota. While aquatic life criteria are based on water column toxicity, human health criteria may not be. So acute and chronic toxicity of pollutants is addressed by comparison with aquatic life criteria (Note that only the application of Louisiana aquatic life criteria result in exceedances that indicate a TMDL is needed).

For sediments, there are adequate data that indicate that the sediments are toxic. The uncertainty concerns the pollutants that are responsible for the toxicity. It is essentially impossible to determine the relative contribution of any pollutant to total sediment toxicity, but toxicity identification evaluation (TIE) procedures allow assessment of which groups of compounds are contributing to sediment toxicity.

A TIE has been done on a limited number of samples in the Calcasieu Estuary, and the TIE results indicate that the pollutant classes identified are representative of those constituents contributing to sediment toxicity.

**Similar Comments**

009/0069 Citgo Petroleum Corporation

**Comment 004/0078 Louisiana Chemical Association**

Because EPA has not developed an acceptable narrative standard translator for sediment toxicity, the proposed TMDLs for sediment in the draft TMDL are not scientifically supported and should not be adopted. Instead, EPA should provide for a data collection program to conduct the necessary sediment toxicity identification evaluations (TIE) to determine the pollutants causing sediment toxicity and the appropriate pollutant concentration targets.

**Response**

See responses to comments 004/0062 and 004/0074.

#### **Similar Comments**

007/0016     Sasol North America, Inc.  
009/0073     Citgo Petroleum Corporation

#### **Comment        004/0079        Louisiana Chemical Association**

As noted by EPA on page 15 of the Draft TMDL Document, a TMDL should “provide an opportunity to compare relative contributions from all sources and consider technical and economic tradeoffs between point and non-point sources.” There is no evidence within the Draft TMDL Document that EPA actually considered “technical and economic tradeoffs between point and non-point sources.”

LCA submits that EPA made no effort to allow increased use of best management practices to control discharges of zinc, copper, and lead from nonpoint sources so as to allow increased loadings of zinc, copper, and lead from point sources. See, e.g., (a) proposed TMDL for zinc for Bayou Verdine (030306), (b) proposed TMDL for copper for Bayou D’Inde (030901), (c) proposed TMDL for copper for Upper Calcasieu Estuary and Ship Channel (030301), and (d) proposed TMDL for lead for Upper Calcasieu Estuary and Ship Channel (030301). LCA submits that failure to consider such tradeoffs for the affected pollutants renders the relevant TMDLs arbitrary, capricious, and legally impermissible.

#### **Response**

The Final TMDL bases wasteload allocations on tidal flows. When tidal flows are considered, the relative contribution of nonpoint source loads is very small in relation to the allowable load for a subsegment. Reducing nonpoint sources would affect only the third significant figure of wasteload allocations for facilities. The economic trade-offs between point source and nonpoint source controls essentially do not exist.

#### **Similar Comments**

009/0074     Citgo Petroleum Corporation  
013/0019     Louisiana Mid-Continent Oil & Gas Association

#### **Comment        004/0081        Louisiana Chemical Association**

It is technically incorrect to use nonpoint source loadings for aquatic life criteria that are evaluated at the 7Q10. There is no surface runoff from rain events when the 7Q10 occurs; therefore, there should be no nonpoint source loadings of pollutants under such flow condition.

In the Draft TMDL Document, EPA uses a flow-based ratio method to estimate nonpoint source runoff contributions at critical low flow in the tributaries and estuary (page 14). No technical analysis is provided to support the conclusion that any surface runoff (i.e., nonpoint source flows) will occur coincident with the 7-day, 1-in-10-year low stream flows (7Q10). In fact, it is logical to assume that there will be no surface runoff during the critical low flow periods for this basin. The potential for surface runoff can be evaluated by reviewing the stream flow records in the watershed to determine when the 7Q10 flow has most recently occurred and then collecting and evaluating precipitation records for the same time period. It is probable that even if there is precipitation somewhere within the watershed during the period when the 7Q10 occurs, it will be very limited in both amount and spatial distribution and will not contribute nonpoint source loadings of significance.

The Proposed TMDLs should be recalculated assuming that there is no nonpoint source loading for all pollutants that have aquatic life criteria as targets, i.e., those wasteload allocations that are based on the 7Q10.

#### **Response**

It is accepted that nonpoint source contributions of specific metals may have been overestimated in the Draft TMDL by assuming that the amount of runoff is related to the ratio between average flow and the 7Q10 flow. But it is also true that runoff can occur at the 7Q10 flow, unless the 7Q10 flow is zero. The relative importance of nonpoint sources has been substantially reduced in the Final TMDL because tidal flows have been incorporated into the wasteload allocation procedures.

#### **Similar Comments**

007/0018 Sasol North America, Inc.  
 009/0076 Citgo Petroleum Corporation  
 016/0064 PPG Industries, Inc.

**Comment      004/0083      Louisiana Chemical Association**

LCA submits that the 20% MOS used by EPA in the development of TMDLs in the Draft TMDL Document is overly conservative and inappropriate, especially in light of the conservative approach used by EPA in its modeling and projection methodologies. As noted by EPA in its "Guidance for Water Quality-Based Decisions: The TMDL Process," EPA 440/4-91-001 (April 1991):

"The MOS is normally incorporated *into the conservative assumptions used to develop TMDLs (generally within the calculations or models)* and approved by EPA either individually or in State/EPA agreements. If the MOS needs to be larger than that which is allowed through the conservative assumptions, additional MOS can be added as a separate component of the TMDL . . . ." (Emphasis added)

The overly conservative approach used by EPA--in adding an additional margin of safety of 20% to the calculated TMDLs--renders the TMDLs arbitrary, capricious, and legally impermissible.

LCA further submits that margins of safety for TMDLs should be based on estimates of the uncertainty of the estimated wasteload and load allocations. EPA has done no analysis that justifies its arbitrary MOS of 20%. EPA has stated in the TMDL regulation that the MOS should be based on the estimated uncertainty in the TMDL predictions. While this regulation is not yet effective, this recommendation is both scientifically sound and good public policy. EPA should base any MOS on an uncertainty analysis of the TMDLs.

**Response**

**Check.** LDEQ, in developing TMDLs for toxic pollutants, typically applies a 20% margin of safety in TMDLs submitted to EPA. EPA is also employing a 20% margin of safety to be as consistent as possible with LDEQ policies.

**Similar Comments**

007/0029 Sasol North America, Inc.  
 009/0078 Citgo Petroleum Corporation  
 009/0080 Citgo Petroleum Corporation  
 013/0018 Louisiana Mid-Continent Oil & Gas Association  
 016/0066 PPG Industries, Inc.

**Comment      004/0085      Louisiana Chemical Association**

A hydrodynamic model should have been used to estimate flows and dispersion in the estuary. Because of tidal dispersion, the water column-sediment interactions are very important in this estuary, and the failure to use a modeling approach that accounts for tidal dispersion and sediment transport is a fatal flaw in the Proposed TMDLs. EPA states that it evaluated the use of the WASP6 model to simulate pollutant transport and fate in the estuary and tributaries (Draft TMDL Document, page 16). EPA abandoned this effort and selected the mass balance approach because:

Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate.

This is not a justifiable reason to abandon the scientifically supported approach needed for a TMDL of this importance and magnitude. Indeed, this statement indicates that because EPA was under a schedule set by court order, it abandoned the best available scientific tools to perform the TMDL in order to meet its schedule.

**Response**

In an ideal world, a fully developed, verified, and calibrated hydrodynamic model would be preferred to estimate wasteload allocations. It is desirable that considerable time and effort be spent to develop such a model or refine existing models for the Calcasieu Estuary. It should be noted, however, that developing such models is not a trivial matter, even for simple hydrologic systems. The major difficulty in developing (or refining) such a model for the Calcasieu Estuary is data. The Calcasieu Estuary is a very complex system, and data that can be used to fully describe even the flow interactions among the parallel channels, multiple connections between channels, and loops simply do not exist.

**Similar Comments**

007/0024 Sasol North America, Inc.  
009/0080 Citgo Petroleum Corporation  
016/0023 PPG Industries, Inc.

**Comment      004/0086      Louisiana Chemical Association**

TMDLs are routinely conducted by states and EPA using literature values for certain of the fate constants used in WASP6 and similar models. EPA has issued numerous guidance documents on selecting necessary coefficients for these models and performing sensitivity analyses of the results to better understand the reliability of model predictions. Models can also be parameterized using sensitivity analysis and/or optimization approaches. As a worst case simplification, pollutants that are modeled could be considered as conservative (i.e., not subject to biodegradation, chemical reactions, biodegradation or volatilization) in a model that simulates the hydrodynamics of the system. Even a conservative pollutant simulation approach using an appropriate mass transport model would be preferable to a mass balance. The mass balance approach does not allow any analysis of the precision and accuracy of the TMDL results, which is a fundamental concept that EPA included in the 2000 TMDL regulation.

The transport and dispersion of pollutants in the Calcasieu Estuary is complex and must be considered in any TMDL analysis. The basic hydrodynamics of the system can be represented by a number of models, including WASP6, and only requires fresh water inflows, tidal data, and the bathymetry of the estuary and tributaries (including the ship channel) to obtain realistic simulation. This information is readily available and should have been used to develop a model for determining pollutant transport in the tributaries and estuary (a previous water quality model developed by LDEQ for dissolved oxygen evaluations has sufficient hydraulic data to serve as a starting point).

EPA should redo the draft TMDL using an appropriate model to simulate the complex hydrodynamics of the Calcasieu Estuary. The hydrodynamic model should be calibrated and verified with tidal data and salinity data, both of which are available.

Once an acceptably calibrated hydrodynamic model is available, a water quality model using those hydrodynamics should be developed. The WASP6 model would be acceptable. Alternatively, other models could also be used if they represent the fate and transport processes that occur in the estuary. As a minimum, the water quality model should include chemical reactions, biodegradation, volatilization, and particulate attachment and sedimentation for organic chemicals and particulate partitioning and sedimentation for metals. It must also include sediment resuspension and transport, for reasons discussed elsewhere in these comments. The water quality model should be calibrated to the extent practical with available data. Where insufficient data are available, then sensitivity analyses should be performed to determine the uncertainty in the model predictions. All of this information is justified for a TMDL that is as complex and has as much potential impact on dischargers as this one does.

**Response**

Considerable effort was spent on trying to develop a model using the coefficients described in this comment. As was mentioned in the Draft TMDL, the model developed was not of sufficient reliability to be confident of the predicted results. Too many assumptions about flows and cross-sectional areas were required to develop credible results. Comprehensive, synoptic monitoring of the system could develop sufficient data to develop a comprehensive, calibrated model.

**Similar Comments**

007/0025 Sasol North America, Inc.  
009/0081 Citgo Petroleum Corporation  
016/0026 PPG Industries, Inc.

**Comment      004/0089      Louisiana Chemical Association**

EPA's statement that tidal dispersion at low flows is unimportant and can be ignored is not accurate for the main channel of the estuary. EPA states in the Draft TMDL Document that tidal dispersion is not important at low (critical) stream flows (Draft TMDL Document, page 18). Also, EPA states that no estimates of tidal dispersion are available to use in a model. Both of these statements are inaccurate.

Failure to account for tidal dispersion (which LDEQ considers in NPDES permitting actions) results in overly conservative estimates for discharges to the estuary and is another major technical flaw in the TMDL evaluation. As stated in the previous comment, it is not true that a hydrodynamic model is impractical. Tidal records, salinity, bathymetry, and major inflow are all available and because basic hydraulics of estuarine systems can be reliably simulated with such models, they should be used to predict the effects of tidal dispersion.

**Response**

Acknowledged. The procedures used to calculate TMDLs incorporates tidal dispersion in the Final TMDLs.

**Similar Comments**

007/0026	Sasol North America, Inc.
009/0084	Citgo Petroleum Corporation
013/0017	Louisiana Mid-Continent Oil & Gas Association
016/0020	PPG Industries, Inc.

**Comment      004/0091      Louisiana Chemical Association**

The TMDL incorrectly excludes partitioning of organic chemicals and metals to particulates and subsequent sedimentation and potential resuspension. EPA states that it did not include partitioning of organic chemicals and metals to particulates and subsequent sedimentation because:

- (1) it has no estimates of particle density and sedimentation rates; and
- (2) if metals and organic chemicals in particulates accumulate in contaminated sediments they will contribute to an existing impairment (Draft TMDL Document, page 18).

Both of these arguments for not dealing with this fate mechanism are unjustified.

**Response**

Partitioning was explored in runs of an uncalibrated model of the Calcasieu Estuary. Even under the very low flows that were used in the Draft TMDLs, the settling of particulates, using a range of assumptions about particulate densities, was insignificant in relation to transport by net downstream flows. Thus water column concentrations were essentially unchanged by exchange of pollutants with the sediments. This does not mean, however, that the settling of particulates to the sediments is not contributing to sediment toxicity. This is the premise of our approach to controlling water column concentrations to preclude this element as much as possible.

**Similar Comments**

007/0027	Sasol North America, Inc.
009/0086	Citgo Petroleum Corporation

**Comment      004/0092      Louisiana Chemical Association**

With respect to sedimentation rates, there are ample data in the technical literature that can be used to estimate such rates in tidally-affected surface waters. As discussed earlier, default rates for variables such as sedimentation of particulates can be used in a model and sensitivity analyses can be used to establish acceptable estimates for prediction of water column pollutant concentrations. The particulates settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. A simple calculation will show that if a point source is achieving a water quality-based effluent limit for a pollutant such as a metal, the concentration of the metal in any particulates that are discharged will typically be well below the elevated sediment concentrations reported in some segments of the Calcasieu Estuary. However, such an analysis to determine if pollutant chemicals attached to particulates actually

could cause or contribute to sediment contamination was never done by EPA.

### **Response**

The assumption was made that if water column concentrations of pollutants comply with water quality criteria that the sediments would be protected--sediment concentrations would not increase and could quite possibly decrease. As mentioned in response to comment 004/0091, a sensitivity analysis was conducted, but the object of the sensitivity analysis was to determine changes in water column concentrations, not changes in sediment concentrations. With the amount of data available at this time, understanding of the system is too limited to estimate changes in sediment concentrations with changes in effluent discharges.

### **Similar Comments**

009/0087     Citgo Petroleum Corporation

### **Comment        004/0093        Louisiana Chemical Association**

A very important issue with respect to sediment-water column interaction and the fate of organic chemicals and metals in the Calcasieu Estuary is not evaluated by EPA (other than mentioning it) in the TMDL. Most if not all of the sediment contamination in the estuary and its tributaries is likely to be a legacy issue, from past discharges that were not treated as effectively as they are today. The existing discharges may not contribute to the existing sediment contamination and may actually be diluting sediment contaminant concentrations if they are having any effect at all. However, EPA did not evaluate any fate or transport mechanisms with respect to sediment contamination so there is no information or evaluation to determine if existing discharges are contributing to sediment pollutant concentrations. The absence of any scientific analysis of the cause and effect relationship between discharges and sediment contaminants results in a scientifically flawed TMDL.

### **Response**

It is acknowledged that legacy issues may play a large role in addressing sediment contamination, and EPA is dealing with this issue through the Superfund Program. The Superfund Program is not, however, dealing with the potential for continuing releases of pollutants that have the potential to contribute to sediment toxicity. The TMDLs address the issue of current pollutant sources contributing to water column and sediment contamination and will work in conjunction with the Superfund program activities to ensure future health of the Calcasieu Estuary.

### **Similar Comments**

009/0088     Citgo Petroleum Corporation

016/0061     PPG Industries, Inc.

### **Comment        004/0094        Louisiana Chemical Association**

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable.

### **Response**

PCBs were selected as a pollutant of concern because there is a fish advisory for PCBs in Bayou D'Inde. It is acknowledged that a single detection for PCBs in the water column would not be sufficient reason to select PCBs.

### **Comment        004/0098        Louisiana Chemical Association**

Other TMDLs, such as that performed for the Flat Fork Creek in West Virginia, acknowledged that controls on ongoing sources would not be required and no WLA was proposed. Instead the TMDL recognized that PCB contamination was from nonpoint sources and that natural processes would decrease instream sediments and water column concentrations of PCBs. Thus, the action plan under the TMDL was to continue fish monitoring to confirm that PCB contamination was being reduced.

### **Response**

It is acknowledged that such may be the case for Flat Fork Creek in West Virginia. It may also be the case for the Calcasieu Estuary. But available information indicates that PCBs may be formed during manufacturing of other products, and thus could currently be discharged. During the Implementation Phase of the TMDL, a more detailed source assessment will need to be conducted to determine if such a situation exists in the Calcasieu Basin. See response to comment 004/0009.

**Comment**      **004/0099**      **Louisiana Chemical Association**

In the case of the Calcasieu River, the fish tissue concentrations throughout the estuary, especially in less motile aquatic species, indicate the ubiquitous nature of PCBs. Further, comparison with nationally published data (EPA 1992) indicate the levels of PCBs found in the Calcasieu Estuary are typically encountered in other urbanized areas of the U. S. For these reasons, EPA should conduct further potential source analysis, including potential urban runoff, prior to taking any further action.

**Response**

In conjunction with setting effluent limitations for the discharge of PCBs, monitoring for potential nonpoint sources of PCBs is also addressed. If current dischargers can demonstrate that they are not discharging PCBs, then greater importance will be placed on identifying nonpoint sources of PCBs.

**Comment**      **004/0100**      **Louisiana Chemical Association**

It should also be noted that EPA has revised its human health criteria for total PCBs based upon changes in the IRIS database. In 1999 EPA revised the human health water quality criteria for PCBs in the National Toxics Rule. 64 Fed. Reg. 61182 (November 1999). The NTR calculates human health criteria for PCBs using the cancer slope factor entered in IRIS. Because better data became available as the result of new studies, IRIS updated the cancer potency factor. This updated cancer potency factor resulted in a revised EPA human health water quality criteria of 0.14 µg/L for protection of human health from consumption of aquatic organisms and water, and 0.15 µg/L for consumption of aquatic organisms only. Louisiana's human health water quality criteria of 0.01 ng/L is based on an outdated cancer slope factor and will likely be revised to reflect updated cancer potency data during the next triennial review.

**Response**

It is acknowledged that EPA's human health criterion for PCBs has been changed. Louisiana may choose to modify its criterion to make it consistent with EPA's. The criteria specified in Louisiana's water quality standards are those that must be used. If the value of a criterion is changed, then the new value would be used to recalculate wasteload allocations.

**Similar Comments**

016/0041      PPG Industries, Inc.

**Comment**      **004/0101**      **Louisiana Chemical Association**

However, even if the human health water quality criteria is revised, which will necessitate a revision of any TMDL, it is highly unlikely that any proposed or future TMDL-derived effluent limitations will cause any decline in tissue concentrations. A TMDL is simply not the appropriate vehicle to address historic PCB contamination.

**Response**

It is acknowledged that a TMDL may not be an appropriate mechanism for dealing with strictly historical sediment contamination. This TMDL is not attempting to correct historical problems. It is only trying to protect for current contributions to an already impacted system. See response to comment 004/0009.

**Comment**      **004/0102**      **Louisiana Chemical Association**

EPA must perform uncertainty analyses of its TMDLs in order to demonstrate the reliability and reasonableness of the wasteload allocations. In the Draft TMDL Document, EPA assumes that all of the impairments identified in the Calcasieu Estuary can be eliminated by control of point sources. In the Draft TMDL Document, EPA makes no



attempt to estimate the uncertainty in the proposed wasteload allocations and load allocations. Estimates of uncertainty are essential to allow the regulated community and the general public to understand how effective the Proposed TMDLs will be in achieving the water quality objectives.

If an appropriate uncertainty analysis is conducted, it will allow identification of those portions of the TMDL that require more data collection and analysis to result in wasteload allocations and load allocations that will eliminate the impairments, but will not be so overly conservative that they cause excessive economic and social impacts.

### **Response**

It is envisioned that one outcome of the TMDLs will be the generation of data that indicate the appropriateness of the wasteload and load allocations. For many pollutants, concentrations in most facility effluents are expected to be below the detection limits of the most sensitive approved methods. If this expectation is realized, then facilities would be in compliance with the wasteload allocations. Should this expectation not be realized, however, additional controls might be necessary to ensure that instream criteria are met

#### **Similar Comments**

007/0030 Sasol North America, Inc.  
009/0090 Citgo Petroleum Corporation

#### **Comment 004/0106 Louisiana Chemical Association**

The draft TMDL proposes wasteload allocations for certain pollutants that are lower than the applicable surface water criterion. This result conflicts with the NPDES regulations, because a discharge that is at a water quality criterion concentration cannot cause or contribute to an exceedance of that criterion. EPA applies its arbitrary MOS of 20% to each TMDL that it calculates, which results in wasteload allocations for some dischargers that are lower than the limits that are calculated with the applicable water quality criteria for zinc, mercury, and nickel. For example, EPA states that the zinc limit for Sasol that is calculated by applying the water quality criterion as an end of pipe limit (no mixing zone) is 1.95 lb/day (Draft TMDL Document, page 31). The proposed zinc TMDL for Sasol is 1.6 lb/day (Draft TMDL Document, Table 15). Thus, because of the 20% MOS applied by EPA, the allowable TMDL for Sasol is approximately 20% lower than the water quality criterion.

LCA believes that the proposed wasteload allocation for zinc, mercury, and nickel, are not consistent with EPA's NPDES regulations for water quality-based effluent limits (40 CFR 122.44(d)) because if the effluent concentrations are equal to the water quality criterion for a pollutant, the discharge cannot cause or contribute to an exceedance of the criterion because it cannot increase the ambient concentration above the criterion. A wasteload allocation that is set below the applicable criterion is inconsistent with EPA permitting regulations and is not scientifically justified. These TMDLs must be revised to set the wasteload allocations at concentrations no lower than the applicable water quality criteria.

### **Response**

Under the procedures used to determine wasteload allocations in the Final TMDL, this is no longer the case.

#### **Similar Comments**

007/0035 Sasol North America, Inc.  
009/0094 Citgo Petroleum Corporation

#### **Comment 004/0107 Louisiana Chemical Association**

The analysis for calcium limits in Bayou Verdine has no scientific foundation and, in fact, no site-specific data were used to generate the wasteload allocation. The TMDL establishes proposed wasteload allocations for calcium, based on the assumption that calcium is causing sediment toxicity (Draft TMDL Document, pages 31-32). This assumption is based on an inconclusive TIE performed by EPA's contractor. In the Draft TMDL Document, EPA indicates that the TIE didn't reduce toxicity of the sediments significantly using a range of treatment and states that these results "suggest" an ion imbalance due to calcium is the cause of toxicity. A TMDL should not be based on a "suggestion" of the cause of toxicity.

### **Response**

The initial TIE report was completed by the EPA Narragansett laboratory (Ho 2000). This work indicated that calcium and ionic imbalance was the primary source of toxicity for Bayou Verdine sediments.

The calcium water quality target was calculated as the mean plus three standard deviations of the calcium metal concentrations in the EPA Superfund data as per LAC 33.IX.1113.B.13. The load allocations in the Final TMDL can hardly be considered restrictive. A major intent of the TMDL is to obtain data that allow the determination of whether calcium is an issue in Bayou Verdine sediments.

#### **Similar Comments**

007/0036 Sasol North America, Inc.

#### **Comment      004/0108      Louisiana Chemical Association**

Once calcium was identified as the “suggested” target pollutant, the “criterion” was derived from water column data taken from the 1999-2000 EPA Superfund monitoring program (Draft TMDL Document, page 32). This value is incorrectly listed in Appendix A of the TMDL as a chronic water quality criterion. It has not been officially adopted by LDEQ as such. There are two fundamental problems with EPA’s selection of a calcium target for the TMDL: (1) there is no technical analysis to demonstrate that calcium in the water column has any correlation to calcium in the sediments; and (2) the calcium data used by EPA was taken from the entire surface water database for the Calcasieu Estuary TMDL and thus has no demonstrated relevance to the site-specific conditions in Bayou Verdine. In fact, there are no calcium data for Bayou Verdine in the EPA database. All of the data are taken from other areas of the estuary and are thus of questionable validity for projecting protective concentrations for the sediments in Bayou Verdine.

The TMDL for calcium in Bayou Verdine is based on a series of assumptions, none of which are supported by any scientific analysis. This TMDL should be deleted from the final TMDLs. It should be replaced by a sediment TIE program that when properly designed and executed, will identify the pollutant or pollutants that are causing the toxicity. EPA requires meeting this objective when an individual discharger performs a TIE--no less should be required of EPA before a TMDL is developed.

#### **Response**

The facts of this comment are correct. See response to comment 004/0107. The calcium value calculated is considered a site-specific target that is applicable to Bayou Verdine as well as other tidal bayous in the system.

#### **Similar Comments**

007/0037 Sasol North America, Inc.

#### **Comment      004/0109      Louisiana Chemical Association**

EPA should provide water quality endpoints based on dissolved concentrations of POCs. LDEQ’s water quality standards are specifically promulgated as dissolved standards since chronic aquatic toxicity and human health criteria are both based on uptake of dissolved fractions. EPA does not provide an evaluation of whether dissolved concentrations of proposed POCs exceed appropriate reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, should be provided on a dissolved basis.

#### **Response**

All POCs based on water quality criterion exceedances are based only on dissolved data in the Final TMDL. Similarly, wasteload allocations are calculated using only dissolved criteria.

#### **Similar Comments**

005/0036 Equistar  
006/0030 Lyondell Chemical Company  
009/0098 Citgo Petroleum Corporation  
014/0038 Conoco Inc.  
015/0036 Firestone Polymers

**Comment**      **004/0110**      **Louisiana Chemical Association**

EPA should provide freshwater quality endpoints for nickel and copper in fresh portions of segments. LDEQ requires that freshwater chronic aquatic toxicity criteria be applied for nickel (a POC in Bayou Verdine and Bayou D'Inde) and copper (a POC in the Calcasieu Ship Channel and Bayou D'Inde) and be adjusted for hardness. EPA does not provide an evaluation of whether nickel and copper exceed appropriate freshwater, hardness adjusted reference levels. Determinations of impairment, calculations of the TMDL, as well as implementation requirements, for nickel and copper should take into account fresh conditions and hardness.

**Response**

All of the subsegments of the Calcasieu Estuary covered by these TMDLs meet the definition of marine systems as define in the Louisiana water quality standards, and thus marine criteria apply. It is unnecessary and inappropriate to conduct evaluation of these waters using freshwater criterion.

**Similar Comments**

005/0037      Equistar  
006/0031      Lyondell Chemical Company  
014/0039      Conoco Inc.  
015/0037      Firestone Polymers

**Comment**      **004/0111**      **Louisiana Chemical Association**

EPA should evaluate stream specific conditions that may result in adjusting endpoints. Other factors can affect water quality criteria for toxic POCs, and chronic aquatic toxicity and human health criteria that are applicable to conditions in one geographic area may not be applicable to the Calcasieu Estuary. Segment specific water effects ratio studies should be undertaken to evaluate if "generic" endpoints for POCs are applicable.

**Response**

Dischargers may conduct studies that demonstrate that a site-specific criterion would be more applicable to various subsegments of the Calcasieu Estuary at any time. Should the studies provide compelling evidence that a less stringent criterion is applicable, the use of such a criterion can be approved by Louisiana and EPA.

**Similar Comments**

005/0038      Equistar  
006/0032      Lyondell Chemical Company  
009/0099      Citgo Petroleum Corporation  
014/0040      Conoco Inc.  
015/0038      Firestone Polymers

**Comment**      **004/0112**      **Louisiana Chemical Association**

There are several pollutants for which TMDLs have been proposed which have been calculated to achieve existing state human health criteria - including TMDLs for HCB, HCBd and PCBs. These human health criteria are likely to be revised at the state's next triennial review because EPA has revised the cancer slope factors in IRIS upon which these criteria are based. EPA has already revised its human health criteria in 40 CFR 131.36 for these pollutants to account for the changes to the IRIS data. All three criteria were revised to slightly higher values. See 40 CFR 131.36. For HCBd, the new criteria is above achievable method detection limits and water quality monitoring data within the Calcasieu Basin has shown that there is no exceedance of this criteria. CA requests that EPA delay completion of any Waste Load Allocations for these criteria until the state completes this triennial review, or, in the alternative, that EPA specify in the response to comments that if LDEQ has proposed to amend these criteria at the time of any permit issuance, then the WLA can be adjusted pursuant to the new criteria.

**Response**

TMDLs are written to the existing uses and criteria associated with those uses. Louisiana may revise their water quality criteria based on changes to EPA's recommended water quality criteria at any time. TMDLs may be revised to reflect these changes to the water quality standards.

**Similar Comments**

016/0035 PPG Industries, Inc.  
 016/0046 PPG Industries, Inc.

**Comment 004/0113 Louisiana Chemical Association**

EPA should provide detailed references, data sets, and copies of actual calculations for the flow estimates.

The low flow estimate for the Calcasieu Ship Channel—Salt Water Barrier to Moss appears to be in error. The EPA low flow value appears to be the lowest daily flow for the Calcasieu River at the Kinder gauging station for 1999 (Ref 1). It is not a 7Q10 flow. In addition, this station is above the confluence with the West Fork and Houston River. Ref 2 provides a factor of 1.86 for adjusting 7Q10 flow at Kinder to the Saltwater Barrier. If 258 cfs is used as the low flow at Kinder, an appropriate estimate for low flow at the Saltwater Barrier would be 479 cfs. Alternatively, Ref. 2 provides a 7Q10 flow estimate for the Calcasieu River at the Saltwater Barrier of 375 cfs. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided an estimate of the critical flow based on tide cycle of 1,917 cfs at Louisiana Pigment (Ref. 3).

The low flow estimate for Bayou D'Inde appears to be in error. Ref. 4 provides a 7Q10 estimate of 7.6 cfs (4.9 mgd). However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. LDEQ has provided estimates of the critical flow based on tide cycle of 34.4 and 31.1 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). Just above PPG Outfall No. 001, near the Bayou D'Inde, critical flow based on tide-cycle is reported to be 121 cfs (Ref 7).

The estimates for the low flows on the remaining segments also appear to be in error. Ref. 4 provides a 7Q10 estimate of 1.4 cfs (0.9 mgd) for Bayou Verdine. However, due to the fact that this segment is tidally influenced, a critical flow based on tide cycle is more appropriate than an estimate of 7Q10. EPA should develop critical flow estimates based on tide cycle for the remaining segments.

The estimates for mean flows for the segments appear to be in error. The 1999 mean flow at Kinder was 2,690 cfs (Ref. 1). Applying the area factor of 1.86 (Ref. 2) a mean flow estimate is 4,994 cfs. EPA should develop mean flow estimates based appropriate data for the remaining segments.

The estimate for harmonic mean flow for the Calcasieu Ship Channel appears to be in error. LDEQ has provided an estimates of the harmonic mean flow at Louisiana Pigment of 5,750 cfs (Ref. 3).

The estimate for harmonic mean flow for Bayou D'Inde appears to be in error. LDEQ has provided estimates of the harmonic mean flow of 103.3 and 93.4 cfs at Firestone and Westlake Polymers (Refs. 5 and 6). At PPG near the mouth of Bayou D'Inde the harmonic mean flow is reported to be 363 cfs (Ref 7).

The estimates for harmonic mean flows on the remaining segments also appear to be in error. EPA should develop estimates of harmonic mean flow on the remaining segments based appropriate data.

**Response**

For the Final TMDLs, calculations of tidal flow, using the tidal prism method, have been used. These data were obtained from the State of Louisiana, as they have been applied in previous permits.

**Similar Comments**

005/0039 Equistar  
 006/0033 Lyondell Chemical Company  
 009/0100 Citgo Petroleum Corporation  
 014/0041 Conoco Inc.  
 015/0039 Firestone Polymers  
 015/0040 Firestone Polymers

**Comment 004/0121 Louisiana Chemical Association**

EPA should provide a minimum of three years for facilities to come into compliance with monitoring requirements. There is currently a significant lack of capacity for obtaining "clean techniques" laboratory analyses. There are

currently only two LDEQ certified laboratories which are offering “clean techniques” and both are out of state (Madison, Wisconsin and Seattle, Washington).

**Response**

EPA Headquarters has compiled a list of 24 laboratories that are capable of analyzing metals using clean techniques. The list is available from Region 6.

**Similar Comments**

005/0058	Equistar
006/0052	Lyondell Chemical Company
006/0056	Lyondell Chemical Company
009/0105	Citgo Petroleum Corporation
014/0060	Conoco Inc.
015/0058	Firestone Polymers

**Comment**      **004/0122**      **Louisiana Chemical Association**

EPA should not impose a deadline for facilities to come into compliance with the WLA until sufficient time has been provided for further study of segment hydrology and water quality, the applicability of “generic” endpoints, and facility flows. Given the absence of reasonable quality data and valid statistical evaluation for the selection of POCs and estimates of segment and facility flows, EPA should allow ample time for these efforts to be undertaken. EPA should expressly provide for a timely re-evaluation of each POC selection and TMDL determination upon submittal of new information.

**Response**

This is a matter of discretion of the permitting authority.

**Similar Comments**

005/0059	Equistar
006/0053	Lyondell Chemical Company
006/0057	Lyondell Chemical Company
009/0106	Citgo Petroleum Corporation
014/0061	Conoco Inc.
015/0059	Firestone Polymers

**Comment**      **004/0123**      **Louisiana Chemical Association**

EPA should eliminate sampling and testing of total metals. The TMDL endpoints are for dissolved concentrations in the water column. All TMDL water quality testing should be performed on a dissolved basis.

**Response**

When effluent limits are imposed on facilities at permit reissuance, limits will be specified as total limits, not dissolved limits. But there are additional concerns that the amounts of pollutants that are associated with particulates are relatively high in the Calcasieu Estuary, and it is the particulate fraction that is associated with sediment contamination. The measurement of both dissolved and total metals will provide data for the more "realistic" assessment of the fate and effects of metals, and thus allow more accurate determination of appropriate wasteload allocations, should they become necessary.

**Similar Comments**

005/0060	Equistar
006/0058	Lyondell Chemical Company
009/0107	Citgo Petroleum Corporation
014/0064	Conoco Inc.
015/0062	Firestone Polymers

**Comment      004/0124      Louisiana Chemical Association**

EPA should eliminate the requirement for LDEQ to sample and monitor sediments. The TMDL endpoints are for dissolved concentrations in the water column. TMDL monitoring of sediment quality should be eliminated unless and until scientific evidence of sediment induced impairment of segment water quality can be demonstrated. Further study of this linkage is certainly warranted.

**Response**

The continued monitoring of sediments is necessary to determine trends in pollutant concentrations, baseline levels, and the effectiveness of the TMDLs. These data allow the determination of whether appropriate controls are having the effect of reducing sediment contamination. It is in the dischargers' interests that these data be developed.

**Similar Comments**

005/0061	Equistar
006/0059	Lyondell Chemical Company
009/0108	Citgo Petroleum Corporation
014/0065	Conoco Inc.
015/0063	Firestone Polymers

**Comment      004/0125      Louisiana Chemical Association**

Facilities should be allowed to report loadings on a "net" basis for POCs with nonpoint source load allocations. Many facilities in the Calcasieu Estuary utilize water from the segments for process and cooling water. "Background" loads in segment water--including upstream, tributary, atmospheric, and nonpoint source loads--are therefore present in this water at the point it is withdrawn and returned to the segment. EPA should expressly allow for dischargers to subtract all "background" contributions from the facility's measured final discharge load.

**Response**

It is acknowledged that EPA's concern relates to those pollutants that are added by a facility, not just those that are present in intake water. The approach taken in the Final TMDLs is to apply limits to process wastes only, not including once-through, non-contact cooling water, and stormwater. To the extent that cooling water outfalls are separated from process outfalls, wasteload allocations are established only on process flows.

**Similar Comments**

005/0062	Equistar
006/0060	Lyondell Chemical Company
009/0109	Citgo Petroleum Corporation
014/0066	Conoco Inc.
015/0064	Firestone Polymers

**Comment      004/0126      Louisiana Chemical Association**

Facilities should be allowed to report loadings on a statistically valid, scientifically reasonable, averaged basis. TMDL wasteload allocations should be implemented as limitations on a statistically based measure of mean loadings. For human health criteria POCs, an annual mean loading is appropriate. For chronic aquatic criteria, a monthly average is appropriate.

**Response**

Wasteload allocations would be implemented as permit limits according to Louisiana's standard practices. Although these individual WLAs may be revised during the permitting process. Compliance with the permit limits would be determined according to Louisiana's standard practices. Permit limits may be specified as maximum daily or average monthly limits, according to Louisiana's standard practices.

**Similar Comments**

005/0063	Equistar
006/0061	Lyondell Chemical Company

009/0110 Citgo Petroleum Corporation  
014/0067 Conoco Inc.

**Comment      004/0127      Louisiana Chemical Association**

Given the many identified limitations of the science in the TMDL process, all proposed toxic TMDLs should be clearly qualified by EPA as “provisional”. In its final determination on the Proposed TMDLs, EPA should include a section specifically discussing the limitations of the science in establishing toxic TMDLs for the Calcasieu Estuary and should clearly state that such TMDLs are provisional. In this section, EPA should set forth a process for prompt review and revision of the affected TMDLs upon obtaining new information. Such information could be generated either by EPA itself, LDEQ, or other interested parties. Finally, EPA should specifically acknowledge that future ambient water quality information may result in delisting of the affected waterbodies and/or POCs and rescinding of TMDLs.

**Response**

The Consent Decree requires that the Final TMDL be developed by May 31, 2002, not a Provisional TMDL.

**Similar Comments**

006/0054 Lyondell Chemical Company  
009/0111 Citgo Petroleum Corporation  
014/0062 Conoco Inc.  
015/0060 Firestone Polymers

**Comment      004/0128      Louisiana Chemical Association**

LCA notes that under the consent decree, effective April 1, 2002, entered into by the parties in those proceedings entitled “Sierra Club and Louisiana Environmental Action Network v. Gregg A. Cooke, Regional Administrator, Christine T. Whitman, Administrator, United States Environmental Protection Agency; and U.S. Environmental Protection Agency,” Civil Action No. 96-0527, Section “S” (4) on the docket of the United States District Court for the Eastern District of Louisiana (the “Consent Decree”), EPA agreed that for the waterbody/pollutant combinations in the Calcasieu Basin (including, without limitation, Waterbody Subsegments 030301, 030306, and 030901), TMDLs would be established by May 31, 2002, unless EPA received an extension of such deadline. LCA submits that the comments submitted in connection with the proposed TMDLs for the Calcasieu Basin justify a request by EPA to extend the deadline(s) for establishment of TMDLs for those waterbodies. LCA further submits that the proposed TMDLs for such waterbodies should not be finalized by EPA until EPA has had a reasonable opportunity to review, consider, and appropriately respond to the comments submitted on such proposed TMDLs. LCA thus requests EPA to take such action(s), as necessary, under the Consent Decree to obtain extension(s) of the May 31, 2002 deadline for establishment of TMDLs for such waterbodies.

**Response**

No extension of the comment period can be granted at this time.

**Similar Comments**

005/0001 Equistar  
009/0112 Citgo Petroleum Corporation  
015/0007 Firestone Polymers  
016/0001 PPG Industries, Inc.  
016/0004 PPG Industries, Inc.

**Comment      005/0004      Equistar**

According to the draft document, all major and minor dischargers to Bayou D’Inde would be required to test effluents for “chronic toxicity” at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing in-stream toxicity. It is recommended that facilities having previous chronic toxicity testing data be allowed to submit the data as evidence to achieve this demonstration. Quarterly toxicity analyses should not be necessary for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES

water permits.

**Response**

Should any facility have monitoring frequencies less than once per quarter based on previous compliance with permit chronic toxicity requirements, it is appropriate that the reduced monitoring frequency be applied at permit reissuance so long as the data were recently collected. Such requests would be considered on a case-by-case basis by the permitting authority.

**Comment**      **005/0006**      **Equistar**

The document states that concentrations of Aroclor 1254 (a PCB) are higher in red drum from Bayou D'Inde than in other parts of the estuary, but that the concentrations are only based on two samples. It appears that more testing of the fish and water column is needed in order to identify the sources of this PCB contamination, prior to establishing TMDL's and WLA's for this pollutant.

**Response**

Further monitoring of fish tissue is recommended for PCBs, hexachlorobutadiene, and hexachlorobenzene. The results of available data are not sufficiently compelling for the Louisiana Department of Health and Hospitals to remove the fish advisory for Bayou D'Inde and the data are not sufficiently compelling for EPA to delist PCBs for the waterbody. Given the possibility that PCBs may be being discharged into the subsegment, a TMDL for PCBs is appropriate.

**Comment**      **005/0007**      **Equistar**

The document states that only two of the five facilities that discharge to the bayou are permitted to discharge these pollutants. Each of the five facilities would be required to monitor effluents quarterly to demonstrate compliance with these waste load allocations. Our facility has several years of weekly analytical data, which demonstrates that this pollutant is not present in the outfall discharge water from the facility. Because of our previous demonstration, our current water permit has a less frequent measuring requirement of once per year. Subsequent analyses on a quarterly basis are not necessary. Quarterly analyses should not be required for those facilities whom have successfully performed this demonstration in the past and are currently continuing to monitor at a less frequent basis per their NPDES/LPDES water permits.

**Response**

Should any facility have monitoring frequencies less than once per quarter based on previous compliance with permit limits for specific pollutants, it may be appropriate that the reduced monitoring frequency be applied at permit reissuance. Such requests would be considered on a case-by-case basis by the permitting authority.

**Comment**      **005/0053**      **Equistar**

EPA needs to determine if certain POC point source loadings are associated with point source stormwater outfalls and develop statistically valid segment flow estimates.

For some POCs, significant point source loads may be attributable to stormwater outfalls. In these cases, use of low flows for dilution are not reasonable since facility discharges of the POC would occur during periods when significantly higher stream flows would be present. EPA should undertake a detailed evaluation of which POCs are stormwater driven and of appropriate segment flow estimates for stormwater events.

**Response**

Some estimated loads identified in the TMDL unquestionably have stormwater components, but these loads are identified for informational purposes only. Wasteload allocations are developed on process outfall flows only to avoid the confounding effect of stormwater discharges and a paucity of load information on pollutants of concern for many facilities.

**Similar Comments**



006/0047 Lyondell Chemical Company  
014/0055 Conoco Inc.  
015/0053 Firestone Polymers

**Comment**      **005/0055**      **Equistar**

Due the errors in locating discharge outfalls and estimating point-source flows EPA has not included allocations for all potential point sources.

**Response**

Based on a review of permits and fact sheets, which represents the best available information these oversights have been corrected.

**Similar Comments**

006/0049 Lyondell Chemical Company  
014/0057 Conoco Inc.  
015/0055 Firestone Polymers

**Comment**      **005/0056**      **Equistar**

PAHs may be present in petroleum refinery point-source discharges. EPA should include wasteload allocations for PAHs for all petroleum refineries.

Benzo(a)anthracene, Benzo(a)pyrene, and Chrysene are reported to be common constituents in typical refinery effluents. (EPA, Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing, and Combustion, National Risk Laboratory, September 2001.) Allocations of PAHs should be provided to:

Conoco—Calcasieu Ship Channel (Segment 030301)  
Citgo—Calcasieu Ship Channel (Segment 030301)  
Citgo—Bayou D'Inde (Segment 030901)

**Response**

Wasteload allocations for PAHs are included in the Final TMDL for all organic chemical, plastics, and synthetic fiber facilities and all petroleum refineries for those outfalls discharging to subsegments on which PAHs are selected as a pollutant of concern.

**Similar Comments**

006/0050 Lyondell Chemical Company  
009/0096 Citgo Petroleum Corporation  
014/0058 Conoco Inc.  
015/0056 Firestone Polymers

**Comment**      **005/0057**      **Equistar**

Given the indeterminate level of POCs in point-source stormwater, and very low wasteload allocations for these POCs, EPA should include wasteload allocations for POCs for all major facilities.

No determinations have been made on the presence of POCs in stormwater at the low levels indicated in the TMDL. Therefore, all major facilities with point-source discharges of stormwater should receive an allocation of each POC.

**Response**

Wasteload allocations are developed for process discharges only. Load allocations for stormwater discharges are problematic, and not all stormwater discharges are reasonably expected to contain each pollutant of concern. Monitoring is required of all stormwater discharges for facilities that could discharge the pollutant in stormwater. But until consistent data are developed across all discharges, allocations for stormwater discharges are premature.

**Similar Comments**

006/0051 Lyondell Chemical Company  
009/0097 Citgo Petroleum Corporation  
014/0059 Conoco Inc.  
015/0057 Firestone Polymers

**Comment 006/0001 Lyondell Chemical Company**

Lyondell believes that in several instances, there are significant omissions in data that should have been considered in the development of these TMDLs. Further concerns are that much data demonstrating that water quality standards are not being exceeded seemed to be ignored and that EPA did not use the mixing zone flows required by state rules for determining flows, particularly for tidally influenced waters. In addition it appears that EPA's contractor used models and/or guidance that have not been accepted by the scientific community. Specific concerns are addressed in the Technical Comments report dated 4/26/02.

**Response**

These issues are dealt with in more detail in responses to comments above.

**Comment 006/0055 Lyondell Chemical Company**

EPA should specifically acknowledge that future ambient water quality information will result in delisting of POCs and rescinding of TMDLs.

**Response**

Additional data and information may lead to delisting of particular pollutants of concern for specific subsegments, but delisting does not imply that the TMDL would be rescinded.

**Similar Comments**

014/0063 Conoco Inc.  
015/0061 Firestone Polymers

**Comment 007/0001 Sasol North America, Inc.**

Sasol will soon receive an NPDES permit from EPA Region 6 that will authorize discharge through a high-rate diffuser into the upper Calcasieu Estuary (subsegment 030301) just upstream of the Clooney Island loop. The draft TMDL lists the Sasol discharge into Bayou Verdine. Upon issuance of the NPDES permit, the process wastewater will discharge to the Calcasieu River, except during emergencies or when maintenance is being performed on the effluent pipeline or diffuser.

**Response**

The location of Sasol's discharge has been changed as per the permit issued May 15, 2002.

**Comment 007/0002 Sasol North America, Inc.**

EPA exceeded its authority for the pollutants included in TMDL. Section 303(d) of the Clean Water Act is very clear that TMDLs are to be developed for pollutants that exceed water quality standards, not for ad hoc lists of pollutants generated from guidance.

**Response**

The pollutants of concern are selected based on exceedances of Louisiana's Water Quality Standards, a previous listing for which there is no weight of evidence that allows delisting, the presence of fish advisories and sediment concerns documented in the 303(d) list.

**Comment 007/0017 Sasol North America, Inc.**

Assuming zero loadings for anthropogenic pollutants in upstream flows and tributaries is appropriate. The draft TMDL assumes that the background concentrations of anthropogenic pollutants is zero. Sasol agrees that this

assumption is appropriate and it should be included in the final TMDL methodology. This assumption is also justified for the polynuclear aromatic hydrocarbons (PAH) which, although not strictly limited to anthropogenic sources, are not typically found in surface waters at significant concentrations when they originate from natural sources.

**Response**

Comment noted.

**Comment      007/0019      Sasol North America, Inc.**

EPA used one atmospheric deposition station to estimate the potential mercury contribution by atmospheric sources. There are other EPA databases that should be consulted to determine the importance of this source of mercury. In the draft TMDL, EPA used a single atmospheric deposition station located within the Calcasieu Estuary watershed to estimate the contribution of atmospheric mercury to the surface water loading of this chemical. The estimated rate of mercury deposition used in the TMDL was 10.6 µg/m<sup>2</sup> per year (draft TMDL, page 15). In the TMDL that EPA Region 4 performed on the Savannah River, it used the RELMAP model from EPA's 1997 Mercury Study Report to Congress to estimate wet and dry deposition rates for mercury. The estimated annual wet deposition rate for the entire Savannah River basin was 12.2 µg/m<sup>2</sup> and the annual dry rate was 8.22 µg/m<sup>2</sup> for a total deposition rate of 20.42 µg/m<sup>2</sup>. This is almost twice the rate used for the Calcasieu Estuary.

**Response**

The rate used for the Calcasieu Basin is based on data taken within the Calcasieu Basin (at Lake Charles). Local data are probably more applicable to the Calcasieu Basin than modeled outputs for the Savannah River Basin.

**Comment      007/0020      Sasol North America, Inc.**

If EPA has underestimated the atmospheric deposition rate for mercury, it may have overestimated the importance of the contribution of mercury by point sources to any measured fish tissue concentrations. In other locations, such as the Savannah River TMDL, atmospheric deposition is estimated to constitute well over 90% of the mercury that enters surface waters. In such cases, additional controls on point sources are ineffective at improving water quality and are extremely costly. EPA should reevaluate its estimates of atmospheric deposition in the Calcasieu Estuary watershed using all available and relevant databases.

**Response**

In the Calcasieu Basin, there is no evidence that atmospheric deposition is greater than point source discharges. Estimated atmospheric deposition of mercury is several orders of magnitude lower than existing, known discharges. The commenter is directed to EPA's TMDL for Calcasieu coastal subsegments for additional information on atmospheric deposition information.

**Comment      007/0021      Sasol North America, Inc.**

It appears that EPA has only estimated the contribution of atmospheric mercury deposition due to direct deposition on the surface of the waterbodies. If this is the case, it has significantly underestimated the mercury loading due to atmospheric deposition.

EPA has recently published its Mercury Maps study, which quantitatively links atmospheric deposition of mercury to fish tissue concentrations. This EPA study indicates that greater than 75% reduction in atmospheric deposition of mercury could be required in the Calcasieu Estuary in order to achieve acceptable fish tissue concentrations. The Mercury Maps study and the Savannah River TMDL both consider the atmospheric deposition of mercury on the entire watershed, with subsequent discharge to the surface water during runoff events. This source of mercury is several orders of magnitude greater than the atmospheric deposition of mercury on the water surface. If EPA only estimated the deposition of mercury on the water surfaces of the Calcasieu Estuary, it has significantly underestimated the mercury loadings from this source.

**Response**

Although limited, available evidence (Appendix D) suggests that mercury concentrations are elevated in fish tissue in the Calcasieu, but with the possible exception of Bayou D'Inde, not at levels of concern. The TMDLs for mercury are to address water column and sediment toxicity concerns, not fish tissue concentration concerns. The presumption is the attainment of the aquatic life criterion, which is more stringent than the human health criterion, should protect against localized bioaccumulation.

**Comment**      **007/0022**      **Sasol North America, Inc.**

If EPA has underestimated the atmospheric deposition rate of mercury for the draft TMDL, it will overestimate the required reductions in effluent mercury from point sources. The result is that point sources are faced with possible mercury waste load allocations that may be both unachievable and unnecessary. If atmospheric deposition of mercury is the cause of impaired surface water quality, which EPA has indicated is likely to be true in the majority of watersheds in the country, then assigning very low effluent loadings of mercury to point sources will not eliminate the impairment but will place an undue burden on points sources that have little or no contribution to the impairment.

EPA should reevaluate its atmospheric mercury deposition estimates and should not establish numeric mercury allocations to point sources unless it demonstrates that they are causing and/or contributing to the impairment.

**Response**

Wasteload allocations have been recalculated in the Final TMDL. Based on available data, EPA believes these limits are achievable. They are necessary to ensure that Louisiana Water Quality Standards are achieved in the Calcasieu Estuary.

**Comment**      **007/0023**      **Sasol North America, Inc.**

There will be essentially no atmospheric deposition of the volatile organic pollutants reported in the toxics release inventory. Therefore, it is inappropriate to include the loadings for these pollutants in the non-point source loading terms. EPA used the toxics release inventory (TRI) data for facilities in the watershed to estimate the potential for organic chemicals to enter the watershed by atmospheric deposition (draft TMDL, page 14). These data are provided in Appendix B of the report. Ultimately, EPA did not use any of the TRI data for organic chemicals to calculate atmospheric deposition. This decision is appropriate because most of the reported compounds are gases at atmospheric temperature and pressure and will have a very low potential to enter surface water by wet or dry deposition.

**Response**

Comment noted.

**Comment**      **008/0001**      **W.R. Grace & Co.**

W. R. Grace & Co. agrees with the recommended delisting of ammonia as causing any toxic impairment to segment 030301 of the Calcasieu Estuary, where the W. R. Grace & Co. plant discharges. Ammonia has always been a monitored parameter of the plant water permit and is reported on the monthly Discharge Monitoring Report (DMR). Ammonia is a raw material for the plant, being used in almost all the units.

**Response**

Comment noted.

**Comment**      **008/0002**      **W.R. Grace & Co.**

Copper, mercury, benzo(a)anthracene and benzo(a)pyrene are not used directly in any of the plant processes. Also, these compounds are not known to be in any of the raw materials or ancillary chemicals used in the plant processes. The last effluent priority pollutant scan (see attached) showed the concentrations for these four chemicals to be below the Minimum Quantification Level (MQL) for each test, which supports the fact that these chemicals are not used in the plant processes. Therefore, W. R. Grace & Co. believes these four chemicals are not discharged by the plant, and a wasteload allocation for them is not warranted.

Therefore, based on plant operations and effluent test data, W. R. Grace & Co. respectfully requests that the W. R. Grace & Co. name be removed from each list of plants receiving wasteload allocations for copper, mercury, benzo(a)anthracene and benzo(a)pyrene. The final TMDL for toxics in the Calcasieu Estuary would show our draft wasteload allocation going to the remaining plants on the list.

**Response**

A wasteload allocation for PAHs is not calculated in the Final TMDL for W.R. Grace & Co. Based on review of the processes at the W.R. Grace, discharge of PAHs is considered unlikely. Copper and mercury, however, are far more prevalent in most industrial facility discharges and may enter wastestreams as contaminants in raw materials.

**Comment      009/0029      Citgo Petroleum Corporation**

In the Draft TMDL Document, EPA has used incorrect estimates of mean flow for CITGO's point source discharge outfalls. The TMDL Draft Document reflects the following flows for CITGO into the Upper Calcasieu Estuary and Ship Channel (030301): average, 11.30 MGD; max 15.00 MGD. The correct flows for such discharge are: average 50.12 MGD; max, 62.60 MGD. Thus, the flow data used by EPA is off by a factor of 5. This flow information was obtained from CITGO's DMRs for the year 2001.

**Response**

Wasteload allocations were developed on process flows. Cooling water and stormwater flows are explicitly not considered.

**Comment      009/0031      Citgo Petroleum Corporation**

EPA's information on the location of several other major point-source discharge outfalls contain numerous significant errors. These errors include:

Conoco--Primary outfalls have been moved to the Calcasieu Ship Channel (Segment 030301).

Condea Vista--Permit being finalized to move primary outfalls to the Calcasieu Ship Channel (Segment 030301).

Lyondell--Stormwater Outfalls 025, 026, and 032 to Bayou Verdine (Segment 030306) were not included.

PPG--Outfall 002 to Calcasieu Ship Channel (Segment 030301) was not included.

Since these errors reflect only a preliminary and partial survey of known major dischargers, EPA should conduct a complete field survey of all Calcasieu Estuary outfalls to ensure that they are located on the proper segment.

**Response**

A number of commenters, including LDEQ, indicated a number of discharges were incorrectly located. Significant effort has been made to address these errors. Outfall receiving waters are identified in the Final TMDL by a combination of sources including permits, fact sheets, and comments.

**Comment      012/0001      RESTORE**

EPA and NOAA were supposed to have, last month, released the results of comprehensive analyses they have been doing on fish tissue. Those results are late, we are told, because of some sort of laboratory or interpretation delay.

Surely those two brand new datasets might have made it possible for everyone to more efficiently construct and comment on Calcasieu TMDLs and the proposed determinations of non-necessities.

**Response**

EPA agrees these data would be useful. However the timelines for completion of TMDLs in the Calcasieu basin in the April 2002 consent decree do not allow for the time to collect this information.

**Comment      012/0002      RESTORE**

Your own Region 6 website has a section on the Calcasieu Estuary in which a massive amount of data is available

showing that there is serious contamination of various types in the most heavily utilized sections of the river. RESTORE believes that it is imperative that you take another look at your proposals in order to properly restore the ecosystem and prudently protect the public health.

#### **Response**

The most recent data from the Calcasieu database are included in the TMDL.

#### **Comment      012/0003      RESTORE**

Subsegment 030301 -- dioxins and other priority organics seem to have been omitted. We think they should be added. See attached Marplot sheets for PCD\_T4 and Total Chlorobenzenes.

#### **Response**

While the sediment concentrations of the chemicals identified in this comment appear to be elevated, comparison of recent (since 1996) sediment concentrations with available ESGs and ERMs indicate these pollutants are not at sufficiently high levels to warrant being selected as pollutants of concern for any subsegment in the Calcasieu Estuary. The ATSDR has recently sampled fish tissue for dioxins in the Calcasieu Estuary, but the analyses are not yet complete. These data may be useful in determining if there is a human health concern for dioxin in the estuary.

#### **Comment      012/0004      RESTORE**

See also the attached sheet for B2ETHXPHTH (bis-ethylhexylphthalate, BEHP). The presence of BEHP in the heavily utilized recreational areas such as Prien Lake is especially disturbing given the building evidence of that molecule's hormone disrupting effects even at low levels.

#### **Response**

Unfortunately, bis (2-ethylhexyl) phthalate has no ESG or ERM, so no comparison with reference levels is possible. Certainly levels appear elevated, particularly in Bayou Verdine and Bayou D'Inde, but the importance of sediment concentrations greater than 970 µg/kg is not known as far as sediment toxicity is concerned. EPA is not aware of any data that allow determining the effects on human health of sediment concentrations of BEHP. Louisiana also has not adopted a water quality standard for this pollutant.

#### **Comment      012/0005      RESTORE**

One of the background elements in our concerns is the fact that there are strong mechanisms for resuspension of contaminated sediments throughout this river system, mechanisms such as winds across shallow lakes, tugboats slugging through the shallow bayous, and supertankers grinding up the main Ship Channel. Those contaminated sediments are encountered by aquatic biota, children wading on the local parks beaches, water skiers, kneeboarders, wave runners, and other swimmers. The toxic chemicals adherent to the suspended clay particles often have more affinity for skin oils than for clay and are therefore easily transferred through dermal absorption into the human system.

#### **Response**

An informational advisory has been established by the State Department of Health for concerns related to fish consumption in the Calcasieu Estuary. It is a state decision process to establish swimming advisories to warn the public against dermal contact. Also the state has the option to incorporate dermal absorption and incidental ingestion of water in its water quality standards process.

#### **Comment      012/0006      RESTORE**

Look at another Marplot from your website, the one showing the number of ERMs Exceeded (ERM = Effects Range Median, an indication of the potency of the overall contamination situation).

Notice that the graphic is saturated with multiple exceedances at most locations in the central part of the study area.

In order to get these waters back to fishable and swimmable conditions (which we had hoped would be

accomplished by 1983, one of the goals of the Clean Water Act if we recall correctly), there must be TMDLs that are meaningful, not convenient.

**Response**

Exceedances of ERM's for most pollutants occur in most subsegments of the Calcasieu Estuary. But a single exceedance for a given pollutant does not signify that the subsegment is contaminated to the degree that a TMDL is warranted. As specified in the methodology section of the TMDL, EPA did not select pollutants of concern for any pollutant based on exceedances of ERM's unless more than 10% of the samples taken in a subsegment exceed the ERM. This is not a matter of convenience. Exceedances in more than 10% of samples, indicates that the pollutant is reasonably expected to have adverse effects on sediment toxicity.

**Comment**      **012/0007**      **RESTORE**

It is unwise to say that a TMDL for priority organics is not needed in Segment 030302 Lake Charles when we can see the needs from the chlorobenzene and ERM Marplots.

**Response**

Given the absence of dischargers that are reasonably expected to discharge priority organics into Lake Charles and the low concentrations of priority organics in sediments, a TMDL for Lake Charles would have no discernible impact on either water or sediment quality. EPA does not believe that these waters are impaired by priority organics.

**Comment**      **012/0008**      **RESTORE**

It is unwise to say that Priority Organics TMDLs are not needed in 030303 Prien Lake, 030304 Moss Lake, and 030305 Contraband Bayou when we can see the needs from the same Marplots as above and the BEHP Marplot.

**Response**

The same argument used in response to comment 012/0007 applies to these subsegments as well.

**Comment**      **012/0009**      **RESTORE**

It is unwise to delete non-priority and other organics from segments 030302 Lake Charles, 030306 Bayou Verdine, and 030309 Bayou D'Inde since many of those molecules likely contribute to the mobility, solvency, biotic uptake, and dermal absorption of the more dangerous organics.

**Response**

While the comment may be correct, there are no data that relate concentrations of these pollutants to heightened mobility or dermal absorption of other pollutants of concern. There is therefore no basis to select any pollutants in these categories as pollutants of concern.

**Comment**      **013/0001**      **Louisiana Mid-Continent Oil & Gas Association**

Mid-Continent is extremely disappointed that the EPA did not timely grant Mid-Continent's (dated April 12, 2002) and others' requests to extend the comment deadline. This in spite of gross errors identified in the document and significant legal issues that require significant time to address. The following are Mid-Continent's best effort to address the areas of major concern in the time allotted.

**Response**

Comment noted.

**Comment**      **013/0002**      **Louisiana Mid-Continent Oil & Gas Association**

Table 3 (Page 8) shows the Conoco, Inc. refinery discharging to both Bayou Verdine and the Calcasieu River. It is Mid-Continent's understanding, however, that Conoco no longer discharges process waters to Bayou Verdine and has not done so for several years. In spite of this, the EPA calculates TMDLs for Conoco for Bayou Verdine.

Conoco does discharge to the Calcasieu River (Upper Calcasieu Estuary and Ship Channel – Segment 030301), but EPA fails to include the discharge for Conoco in the TMDL calculations for this segment (begins on Page 55). It is Mid-Continent's understanding that this concern is also true for Sasol North America, Inc.'s (identified in the document as Condea Vista) discharge as well which is about to also be changed to the Calcasieu River.

The TMDLs for both Bayou Verdine and the Calcasieu Estuary must be reperformed to account for these changes. It not, one can argue that neither facility could discharge into the Calcasieu River since no wasteload allocation was provided.

#### **Response**

These facts have been incorporated into the Final TMDL.

#### **Comment      013/0003      Louisiana Mid-Continent Oil & Gas Association**

Table 3 (Page 8) shows discharges from Citgo Petroleum into both Bayou D'Inde and the Calcasieu River. This is correct. The refinery complex discharges into the Calcasieu River while an auxiliary facility discharges into Bayou D'Inde.

#### **Response**

Comment noted.

#### **Comment      013/0004      Louisiana Mid-Continent Oil & Gas Association**

The report states that Segment 030901 does not include all of Bayou D'Inde and part of the bayou is included in Segment 030301. Mid-Continent wants to ensure that the Citgo discharges are properly accounted for in the analysis.

#### **Response**

The location of these outfalls is correct in the Final TMDL.

#### **Comment      013/0005      Louisiana Mid-Continent Oil & Gas Association**

If the Citgo discharge is actually into Segment 030901, then the EPA does not allocate a wasteload for the Citgo facility into Bayou D'Inde. Mid-Continent requests that the EPA confirm this situation. The EPA would have to reperform the TMDL calculation to account for the discharge.

#### **Response**

Wasteload allocations are recalculated for all subsegments of the Calcasieu Estuary in the Final TMDL.

#### **Comment      013/0007      Louisiana Mid-Continent Oil & Gas Association**

Mid-Continent wants to ensure that the EPA properly characterizes the potential constituents found in wastewater discharges and accounts for these in the TMDL analysis. In September 2001, the EPA published a Research and Development document (EPA-600/R-01-066) entitled "Mercury in Petroleum and Natural Gas: Estimation of Emissions from Production, Processing and Combustion". In Table 7-3 of this document, EPA lists several trace metals and trace organics found in a "typical" refinery wastewater. These include:

- Arsenic
- Chromium
- Copper
- Mercury
- Nickel
- Selenium
- Zinc
- Benzene



Toluene  
Ethylbenzene  
Acenaphthene  
Benz[a]anthracene  
Benzo[a]pyrene  
Chrysene  
Phenanthrene  
Pyrene  
2,4-Dimethylphenol

The identified sources of this data are two American Petroleum Institute (API) documents and an EPA document. These include:

API Publication No. 4296 (1978)  
API Publication No. 4336 (1981)  
EPA Document EPA/440/1-82/014 (NTIS PB 83-172569) (1982)

Mid-Continent requests that all of these documents be made part of the record for this rulemaking action.

If the EPA is required to calculate a TMDL for one of these constituents and a refinery discharge is involved, then the EPA must include an allocation for that discharge point.

#### **Response**

These facts are incorporated into the Final TMDL.

#### **Comment      013/0008      Louisiana Mid-Continent Oil & Gas Association**

The Louisiana Department of Environmental Quality (DEQ) provided compelling data during the TMDL process justifying “delisting” of several waterbody impairments. Mid-Continent is disappointed that the EPA did not give great weight to this information in the development of the TMDLs. In the response to comment period, Mid-Continent urges the EPA to give serious consideration of this information and therefore remove the constituents from the TMDL listing or make other appropriate adjustments.

#### **Response**

EPA considered the information provided, but could not delist some of the subsegments identified because of other data and information that indicate that the waterbodies are, in fact, impaired for the pollutants.

#### **Comment      013/0016      Louisiana Mid-Continent Oil & Gas Association**

Some wasteload allocation concentrations are lower than the applicable surface water criterion. EPA is only authorized to regulate to a concentration that would cause or contribute to an exceedance of the criterion. Concentrations less than the criterion can not have such an impact.

#### **Response**

Wasteload allocations are recalculated in the Final TMDL and required concentrations in effluents are no longer less than criterion values.

#### **Comment      014/0001      Conoco Inc.**

Conoco requests that EPA (1) establish wasteload allocations for Conoco in the Calcasieu River; and (2) conclude that TMDLs are not necessary for occasional discharges into Bayou Verdine or establish wasteload allocations for Conoco's intermittent discharges into Bayou Verdine based upon annual average rather than a daily load.

#### **Response**

These requests are incorporated into the Final TMDL.

**Comment**      **014/0003**      **Conoco Inc.**

There are two additional outfalls that were permitted to discharge effluent other than non-contact stormwater runoff into Bayou Verdine. However, these outfalls may discharge only on a temporary basis, under unusual conditions that amount to emergency bypasses. Outfall 002 is permitted for "emergency discharge of process area stormwater and hydrostatic test water" and Outfall 005 is permitted to discharge into Bayou Verdine only when discharge from Outfall 001 is "not possible due to pipeline maintenance or pump repair." In addition, there are a number of non-contact stormwater runoff outfalls that discharge into both Bayou Verdine and the Calcasieu River.

**Response**

Wasteload allocations have not been developed for the emergency discharges, only for outfall 001 to the Upper Calcasieu Estuary in the Final TMDL.

**Comment**      **014/0004**      **Conoco Inc.**

Conoco therefore requests that EPA re-calculate wasteload allocations for the Calcasieu River and assign Conoco's discharge a wasteload allocation based on accurate, up-to-date information about Conoco's flow rates.

**Response**

The wasteload allocation is recalculated in the Final TMDL based on evaluation of permits, fact sheets, and flow data for individual outfalls.

**Comment**      **014/0005**      **Conoco Inc.**

Further, Conoco urges EPA to reconsider the necessity of TMDLs in the Bayou Verdine. As indicated in comments provided by Sasol, Inc., (formerly CONDEA Vista), Sasol's discharge is anticipated to move to the Calcasieu River, with the consequence that there will be no more daily loading into the Bayou Verdine. Since the only future discharges into the Bayou Verdine will be related to isolated events such as maintenance on each facility's primary outfall or severe rainfall conditions, EPA should reconsider whether it is necessary to establish TMDLs for all of Bayou Verdine. If EPA concludes that some sort of load limitation is necessary, then EPA should consider establishing annual pound limitations rather than daily load requirements.

**Response**

Only load allocations are calculated for Bayou Verdine as there are no process discharges that warrant TMDLs.

**Comment**      **014/0006**      **Conoco Inc.**

Further, as described in detail in Section IV of the attached technical comments, it appears that other data presumably imported from PCS also may be inaccurate. Most significantly, it appears that other facilities discharge outfalls have been mis-located and the flow data for Conoco and other has been underestimated. Since LDEQ has been delegated authority to administer the NPDES program in Louisiana, it may be more appropriate for EPA to collect source assessment data from LDEQ than to rely on PCS.

**Response**

See responses to comments 002/0012 to 002/0017.

**Comment**      **014/0007**      **Conoco Inc.**

Finally, Conoco anticipates that changing the incorrect assumptions about its discharge location and clarifying possible incorrect assumptions about flow rates and effluent loading will result in the assignment of fundamentally different TMDLs and wasteload allocations. Accordingly, Conoco requests that TMDLs be re-proposed for the Calcasieu River Basin in order to afford interested persons notice and opportunity to comment on what we anticipate will be entirely new TMDLs and wasteload allocations.

**Response**

TMDLs for all subsegments are recalculated in the Final TMDL.

**Comment**      **014/0008**      **Conoco Inc.**

Finally, in addition to the points made above and in Conoco's attached technical comments, Conoco concurs with the comments submitted by Louisiana Mid-Continent Oil and Gas Association (Mid-Continent) and Sasol North America, Inc. In the interest of both brevity and time (since Conoco shares Mid-Continent's dismay that the requested extension of time was not granted), Conoco adopts the points made in each of these comments as our own, except to the extent of any conflict with specific statements made herein.

**Response**

Comment noted.

**Comment**      **014/0051**      **Conoco Inc.**

The treatment of nondetected values in assessing loads of existing point sources has no sound technical basis. In assessing loads of various pollutants of concern that are currently contributed by point sources, EPA treated nondetected values differently, depending on the reporting convention that was used by the facility reporting the data. If the facility reported a nondetected value as "<" the relevant detection limit, EPA assumed the pollutant of concern actually was present at a concentration of one-half the detection limit, and used that value in calculating loads. However, EPA does not provide a technical justification to support this excessively conservative assumption, which has been critiqued as "having no theoretical basis" (Helsel and Hirsch, 1993).

If the nondetected analyte was reported as zero, EPA did not include a value of one-half the detection limit in its load calculations. However, zero values were disregarded in the calculations of average and daily loads. EPA does not provide a technical basis for treating these values differently, nor does EPA provide a technical justification for either of the approaches selected for treating nondetect values.

**Response**

The existing load calculations in the TMDL are not used for allocation of loads, only for informational purposes. While the different approaches for dealing with nondetects results in variations among estimated loads for facilities, these variations have no impact on wasteload allocations.

**Comment**      **015/0001**      **Firestone Polymers**

Firestone is concerned with the methodology SAIC used to identify pollutants of concern (POC) for each segment of the estuary. The attached comments summarize most of our concerns, however, Firestone wants to emphasize the following. SAIC used screening criteria to identify POCs for final TMDL determination. This is not appropriate. In several cases for Bayou d'Inde, a substance was not detected in any media of concern or it was not detected at concentrations exceeding Louisiana standards, yet based on the screening criteria, the substance was retained as a POC. Furthermore, several substances were detected at extremely low frequency and their presence is not statistically significant. Based on this lack of scientific foundation, Firestone requests that EPA rely on more rigorous, scientific, and risk-based criteria for including substances in the TMDL rather than the simple screening criteria that were used. Alternatively, there is insufficient analytical justification provided or demonstrated for the inclusion of the POCs.

**Response**

See responses to comments 002/0001 and 002/0003.

**Comment**      **015/0002**      **Firestone Polymers**

In the TMDL, the Firestone facility has been assigned waste load allocations and/or testing requirements for the following compounds: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper, hexachlorobenzene and nickel. Firestone has no knowledge of these substances entering our facility in our raw materials with the exception of nickel. Furthermore, Firestone has no knowledge of the significant presence of these substances at our facility, with the exception of nickel and copper. After consulting with our scientists, we feel confident that there are no

mechanisms for forming the listed halogenated organic chemicals in all manufacturing processes used at the facility. The only copper at the facility is a very minor amount of the metallic form in piping and equipment. Firestone incorporates by reference all monitoring data and reports and NPDES/LPDES permit submittals on file with EPA and the Louisiana State Department of Environmental Quality. Therefore, we request that TMDLs and testing requirements for Firestone be removed for the following chemicals: hexachlorobutadiene, PCBs, tetrachloroethane, bromoform, copper and hexachlorobenzene.

#### **Response**

Each of these pollutants has the potential to be created through processes typical of the SIC classification reported for Firestone or be contaminants in raw materials. During implementation, Firestone is free to provide evidence that there is no potential for these pollutants to exist in the discharge.

#### **Comment      015/0003      Firestone Polymers**

The TMDL requires that all testing be conducted using “clean techniques”. It is Firestone’s understanding that this analytical technique is available from only two laboratories nationwide. Industry should not be held to a higher standard than EPA with respect to its analysis. Thus, Firestone requests that for any scientifically valid TMDLs, the required analysis be consistent with Clean Water Act methodologies.

#### **Response**

EPA believes that clean techniques analytical data are appropriate for both effluents and receiving waters and recommends their use for all metal pollutants of concern the TMDL. See also response to comment 004/0121.

#### **Comment      015/0004      Firestone Polymers**

The waste load allocations for the TMDLs are proportioned based on volumetric flow rates from the facilities. The amount of a pollutant of concern (POC) discharged by a facility usually is totally unrelated to the volume of water discharged from the facility. Therefore, each allocation should be proportioned based on mass flow rate of each POC. Moreover, since this method would result in the same percent reduction of POCs for all of the contributing facilities, this is the only representative and equitable approach. Otherwise, those facilities that discharge large amounts of water and not necessarily a large amount of POC would get a disproportionate allocation of a TMDL. Thus, Firestone requests that each TMDL allocation be based on mass flow rate for each substance.

#### **Response**

There are a variety of wasteload allocation methodologies, and the one suggested in this comment may be appropriate. At this time, it is not possible to use this allocation methodology because it requires mass loading data for each facility on a subsegment, and these data do not exist.

#### **Comment      015/0005      Firestone Polymers**

The volumetric flow rates used to set the TMDLs for Firestone’s waste allocation are not accurate. The last year that Firestone recorded storm water flow rates for every event during the entire year was 1998. Using the 1998 storm water flow data for outfalls 003 and 004 along with 2001 effluent data for outfall 001, the following flow rates are obtained (See Table 1 in Hard Copy): Thus, Firestone requests that all calculations using facility flow rates from Firestone Polymers be recalculated using the more current volumes.

#### **Response**

Stormwater discharges are not included in the current wasteload allocation therefore no update of this information is necessary. It is possible that future TMDLs may incorporate stormwater flows.

#### **Comment      015/0006      Firestone Polymers**

The “lower reaches of Bayou D’Inde” (Segment 030901) should be divided into two segments. POC exceedances, hydrology, watersheds and industrial discharge flows in the lower reaches of Bayou D’Inde vary considerably between the upper and lower half. The water body should be divided into two segments at Hwy 108 or where Maple

Fork joins Bayou D'Inde. The lower portion of this segment contains the vast majority of exceedances, the largest discharger by far and different hydrology where Bayou D'Inde fans into a marsh as it joins Calcasieu River. The Draft TMDL report shows that 85% of the average industrial discharge is in the lower Bayou D'Inde. Thus, Firestone requests that EPA divide "the lower reaches of Bayou d'Inde" into two segments (Middle Bayou d'Inde and Lower Bayou d'Inde) at the Hwy 108 bridge.

### **Response**

In essence, the methodology used to calculate wasteload allocations accomplishes this. Wasteload allocations were calculated based on a total allowable load to the bayou and on the allowable dilution at the point of discharge. The more stringent of the two limits is applied: the first to ensure overall water quality of the bayou is attained considering the number of discharges; the second to ensure that water quality of the bayou is attained at the edge of each mixing zone. Any formal reconfigurations of the existing subsegment is a matter that would have to be addressed to the State and incorporated as a revision of the water quality standards.

### **Comment      016/0002      PPG Industries, Inc.**

The proposal actually referenced a draft TMDL report available on the EPA Region 6 website, but the appendices containing the supporting data were not available on the website. While we have ordered these, we have not yet received the supporting data. In addition, our preliminary review indicates that there appear to be factual errors omissions in the data upon which the proposal is based as well as potential legal errors in the methodology for determining TMDLs.

### **Response**

Initially EPA did not make the appendices available on the website. It was apparent after several days that demand for this information warranted posting it. Within approximately 3 days from issuing the draft notices this information was available. EPA apologizes for any inconvenience. We attempted to contact commenters who had requested copies of the appendices and apologize if you were not notified.

### **Comment      016/0003      PPG Industries, Inc.**

In addition, we have concerns that EPA is proposing TMDLs for pollutants even where data demonstrate that the state numeric water quality standards are not being exceeded.

### **Response**

Comment noted.

### **Comment      016/0021      PPG Industries, Inc.**

EPA's contractor grossly underestimated flows for Bayou d'Inde. The average tidal flow for Bayou d'Inde is 363 cfs according to a memorandum from Max J. Forbes, Jr., LDEQ Engineering Section to LDEQ and EPA permitting staff members. A copy of this memorandum is attached as Exhibit 4. The critical low flow, in accordance with the LWQS, LAC 33:IX.1115, is one-third of the average tidal flow or 121 cfs. Id. The basis for these determinations was a Woodward and Clyde survey and a CK Associates survey, both with review and approval by LDEQ.

In contrast, the EPA contractor specified a 7Q10 flow of 0.1 cfs (as the critical low flow) and a harmonic mean flow of 24.7 cfs (which corresponds to average tidal flow in a tidally influenced waterbody). These flow estimates were unsupported in the Draft TMDL Report in spite of the fact that they differ so greatly from the flows developed by the LDEQ engineering section and provided to EPA in 1994. A side-by-side comparison shows the large discrepancy in these flows:

	EPA Presumed Flow (cfs)	Flow Per LDEQ Engineering (cfs)
Critical Low Flow	0.1	121
Long term avg.	24.7	363

If EPA proceeds with any TMDLs for Bayou d'Inde, it must revise the critical low flow and average tidal flow data to comport with the LDEQ engineering determination. Without appropriate flow data for the receiving streams and utilizing inaccurate discharge rates from facilities, the calculated in-stream analyte concentrations are over-estimated

by orders of magnitude.

**Response**

These flows are incorporated into the Final TMDL.

**Comment      016/0024      PPG Industries, Inc.**

Use of a mass balance approach that does not include hydrodynamic modeling represents such an oversimplification of the system that it cannot be scientifically defended. EPA has recognized the complexity of the Calcasieu Estuary system and has indicated that hydrodynamic modeling is an important component in establishing any TMDL/WLA for that system. In the Estuary Guidance Manual, where a peer review of prior modeling efforts on the Calcasieu Estuary associated with the development of a TMDL for dissolved oxygen was performed, it was stated: "The principal difficulty with the Calcasieu estuary is that it is so complex that virtually no model existing at the time of the study [1985] was fully equal to the task.....Future modeling efforts for this estuary should be directed to improving hydrodynamic simulation and estimates of waste loads." (p. 14-17, Emphasis added).

As EPA has already recognized, this level of complexity mandates sound hydrodynamic simulation and fate and transport modeling in order to develop acceptable TMDLs that are scientifically valid. This modeling must include hydrodynamics and water column/sediment pollutant interactions.

**Response**

EPA agrees with the reviewer comments and encourages the development of better information on the hydraulics of the system. The continued lack of data and information on the hydraulic behavior of the system, however, cannot delay the development of TMDLs. Monitoring over time will help to assess whether the level of protection provided by the TMDL is adequate.

**Comment      016/0025      PPG Industries, Inc.**

EPA's use of the mass balance approach to model toxic pollutants in the Calcasieu Estuary system is of special concern when projecting compliance with aquatic protection criteria because these have a short-term exposure basis. This mass balance approach simply does not work when applied to a water subsegment that is miles in length and that is tidally influenced. The hydrodynamics of a surface water body must be considered as these determine the transport of pollutants and affect the environmental fate of such. EPA should have used a hydrodynamic model that can adequately simulate the movement of water and transport of pollutants.

**Response**

EPA is concerned that the methodology employed in the TMDL may not be sufficiently protective of water quality standards primarily because the tidal prism estimation of tidal dispersion is a maximum estimate of actual dispersion. Better information on the dynamics of the system can only improve the calculation of wasteload allocations.

**Comment      016/0027      PPG Industries, Inc.**

It is a fundamental tenet of the Estuary Guidance Manual that in developing a TMDL, data gathering efforts should be specifically designed with the data quality objectives of the selected modeling system to be used. While "off-the-shelf" data may be useful in assisting in the process of identifying pollutants for further evaluation, EPA should not use such data extensively in the TMDL process when the data quality objectives for the studies leading to the generation of such data were significantly different than the data quality objectives necessary for a scientifically sound TMDL.

**Response**

In many cases data may be used for multiple purposes if properly planned. While EPA agrees that the actions suggested in this comment are appropriate, considerable time and money has been devoted to obtaining a substantial amount of chemical data on the Calcasieu Estuary. Unfortunately, resources are not also available to obtain the data necessary to develop a fully calibrated water quality model.

**Comment**      **016/0031**      **PPG Industries, Inc.**

PPG was not able to discern what years of DMR data were used by the EPA contractor as such was not stated in the Draft TMDL Report. Further, it is unclear whether EPA used permit limits or whether they used average reported monthly and maximum daily loads for each outfall and then summed the results by pollutant across each outfall. EPA says both in the Executive Summary of the Draft TMDL Report, p. ES2. It is not clear what time period was reviewed and whether such time period is appropriate for this TMDL proceeding. The Draft TMDL Report does not indicate which years of facility data were reviewed or why the time period is deemed sufficiently representative of normal plant operation. It is also unclear whether the data used is up-to-date.

PPG requests that EPA provide publicly accessible information to better describe the data it did use and then repropose this TMDL for comment to allow adequate public review of the data and assumptions used by EPA or its contractor.

**Response**

The data used for facility loads is explicitly described in the Final TMDL.

**Comment**      **016/0032**      **PPG Industries, Inc.**

EPA did not use appropriate facility flows. EPA's contractor erroneously used only the sum of PPG's internal outfalls 101 and 201 as the facility average flows. However, this estimate left out PPG's once through cooling water discharge, which is combined with the 101 and 201 flows and is discharged through Outfall 001. The appropriate average flow for PPG is the Outfall 001 flow. PPG is attaching, as Exhibit 5 a summary of its 2001 DMR flows for Outfall 001. This shows that the average daily flow is 154.8 MGD and that the maximum daily flow is 243.9 MGD. EPA should use these flows rather than those erroneously determined in the Draft TMDL report.

It should be noted that Outfall 001 flow rate is more than an order of magnitude greater than the sum of 101 and 201, so this is a significant issue for development of the appropriate TMDLs and WLAs.

**Response**

The wasteload allocations in the Draft and Final TMDL are based solely on process flows. Stormwater flows and pollutant contributions were not included. Once-through non-contact cooling water was also not included when determining wasteload allocations. This is done to address only those non-stormwater flows which are likely to contribute pollutants to the receiving water.

**Comment**      **016/0034**      **PPG Industries, Inc.**

Hexachlorobutadiene (HCBd) is not causing any current impairment of Bayou d'Inde and should be delisted. HCBd has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.34 µg/L rather than those used by EPA in this TMDL analysis that used an MDL of 9 µg/L. Thus, even at a significantly lower detection limit than used by EPA, HCBd has not been found.

**Response**

A concentration of 9 µg/L is still well above Louisiana's acute and chronic aquatic life criteria and Louisiana's human health criteria, so nondetects at this level do not provide conclusive proof that HCBd is not a source of impairment for Bayou D'Inde. Given the analytical difficulties of quantifying HCBd at criterion levels, the removal of the fish advisory by the Louisiana Department of Health and Hospitals is the only evidence that could be used to remove HCBd as a pollutant of concern in Bayou D'Inde.

**Comment**      **016/0036**      **PPG Industries, Inc.**

Water column monitoring data is also well supported by years of HCBd fish tissue determinations throughout the estuary. PPG supplied eight quarters of fish testing data to EPA for use in this TMDL. Such data was from the

Calcasieu Estuary Biological Monitoring Program, which is collected by CH2M Hill for LDEQ and LDHH and managed by PPG. The data supplied by PPG was used by EPA to develop Appendix Tables D-4 through D-6 of the Draft TMDL Report. However, PPG is not certain how EPA used this data, as these Tables appear to contain numerous errors when compared to the data originally supplied by PPG. PPG believes that EPA's contractor may have misaligned columns and/or put data in the wrong columns when preparing this chart. PPG is therefore supplying revised Tables D-4 through D-6 with the corrected data as Exhibit 6 to these comments.

**Response**

EPA's contractor apologizes for the error. The tables in the Final TMDL reflect this comment.

**Similar Comments**

016/0040 PPG Industries, Inc.  
016/0047 PPG Industries, Inc.

**Comment 016/0037 PPG Industries, Inc.**

The Draft TMDL Report contains other obvious data errors as well. The Table 20 listing of "Existing" loads attributed to PPG for HCBd is in error. The mean and maximum loadings should indicate "ND" as the DMRs report zero values for non-detectable compliance monitoring, as instructed in Part I of PPG's NPDES Permit. PPG monitors and reports both internal outfalls and the final external outfall three times per week. Further, Appendix Table E-17 indicates that EPA's contractor erroneously determined that PPG's daily average and daily maximum loadings are higher than its permit limits. As noted, PPG's NPDES/LPDES permit monitoring shows that this is simply not the case, so the assumptions used by EPA for WLAs are invalid.

Given the above points, HCBd should clearly be delisted and no further TMDL activities are appropriate.

**Response**

The tables in Appendix E are revised to show loads by outfall. The number of nondetects are also indicated.

**Similar Comments**

016/0048 PPG Industries, Inc.

**Comment 016/0038 PPG Industries, Inc.**

EPA has proposed a TMDL for total PCBs for Bayou d'Inde. The Draft TMDL Report indicates that only 1 sample out of 27 water column samplings for PCBs in Bayou d'Inde showed detectable levels of PCBs. Without more supporting information concerning the data quality (general methodology, detection limits, selectivity of detection, quantification method) and given the difficulty of low level measurement, the use of this data point is questionable. EPA indicates that concentrations in fish tissue are indicative of water concentrations that may exceed the standard, but also states that none of the facilities permitted to discharge into this subsegment are permitted to discharge PCBs.

**Response**

The single exceedance is informational only--it is not used to select PCBs as a pollutant of concern. PCBs are selected as a pollutant of concern because of the fish advisory for Bayou D'Inde.

**Comment 016/0045 PPG Industries, Inc.**

Hexachlorobenzene (HCB) is not causing any current impairment of Bayou d'Inde and should be delisted. HCB has not been detected by PPG in the water column in the Calcasieu Estuary, including Bayou d'Inde, since 1994. PPG tests water column data quarterly at each of the 11 fish monitoring stations from which fish samples are collected under the Calcasieu Estuary Biological Monitoring Program. Such water monitoring has been conducted for 12 years. The majority of these determinations were performed via EPA Methods 612 or 625 (SIM) with MDLs at 0.05 µg/L, rather than those used by EPA in this TMDL analysis that used a higher MDL. Thus, even at a significantly lower detection limit than used by EPA, HCB has not been found.

**Response**



A concentration of 0.05 µg/L is above Louisiana's human health criteria, so nondetects at this level do not provide conclusive proof that HCB is not a source of impairment for Bayou D'Inde. Given the analytical difficulties of quantifying HCB at criterion levels, the removal of the fish advisory by the Louisiana Department of Health and Hospitals is the only evidence that could be used to remove HCB as a pollutant of concern in Bayou D'Inde.

#### **Similar Comments**

016/0049     PPG Industries, Inc.

#### **Comment        016/0057        PPG Industries, Inc.**

The Draft TMDL Report incorrectly indicated that mercury might be responsible for observed sediment toxicity in Bayou d'Inde. In fact, ChemRisk performed total mercury toxicity evaluations in sediment from lower Bayou d'Inde. These results are documented in a manuscript entitled "A Site-Specific Evaluation of Mercury Toxicity in Sediment," attached as Exhibit 11. The abstract of this study states:

Abstract. A site-specific maximum observed no-effect concentration was identified for mercury in sediments of the Calcasieu River estuary (Louisiana, USA), as an alternative to literature-based sediment quality assessment guidelines, which do not account for site-specific factors influencing mercury bioavailability and toxicity. Ten-day whole-sediment toxicity tests conducted under estuarine conditions (10 ppt salinity) assessed survival and growth (dry weight) of the amphipods *Hyaella azteca* and *Leptocheirus plumulosus*. A dilution study evaluated 29 sediment samples, including 11 analyzed for numerous chemical parameters. The maximum mercury concentration in a nontoxic sample was 2.8 mg/kg; however, toxicity associated with higher mercury concentrations appeared to be explained by other chemicals. A follow-up study was conducted, evaluating three sediment samples with mercury concentrations ranging from 0.3 to 4.1 mg/kg and relatively low concentrations of other co-contaminants. Results of this study indicated no toxicity attributable to mercury at the highest test concentration, indicating that the site-specific sediment effects threshold for mercury likely exceeds 4.1 mg/kg.

#### **Response**

This comment properly identifies some of the problems with TIEs. While they can be used to identify categories of chemicals that may cause sediment toxicity, they cannot conclusively demonstrate that a specific chemical is not responsible. The phrase "however, toxicity associated with higher mercury concentrations appeared to be explained by other chemicals" is speculation similar to that attributed to EPA's contractor. The screen levels EPA has applied to assess sediment are more appropriate than testing two amphipod species in that they address a spectrum of species including those which may be more sensitive to the toxicological effects of mercury.

#### **Comment        016/0058        PPG Industries, Inc.**

Additionally, EPA's Phase II study database of the upper Calcasieu Estuary, including Bayou d'Inde, includes methylmercury sediment data. Lower Bayou d'Inde methylmercury data range from 0.002-0.005 mg/Kg, somewhat lower than the reference areas chosen for the study.

#### **Response**

Total mercury concentrations in sediment were used in the TMDL assessment. This is appropriate since forms of mercury other than the methylated forms are of toxicological significance to benthic organisms.

#### **Comment        016/0060        PPG Industries, Inc.**

The particulates currently settling from the water column will not necessarily cause or contribute to elevated pollutant concentrations in the sediment. In fact, once effluent quality improves (which is probably already the case), the particulates settling from the water column may dilute the pollutant concentrations in the sediment. Such an analysis to determine if pollutant chemicals attached to particulates actually could cause or contribute to sediment contamination was never done by EPA.

#### **Response**

Monitoring for total and dissolved metals over time are designed to address this issue. This type of testing was beyond the scope of this TMDL project.